PALM BEACH COUNTY

UNIFIED LOCAL MITIGATION STRATEGY

2009

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SECTION 1: PURPOSE AND PROGRAM OVERVIEW

1.0 INTRODUCTION

The Palm Beach County Unified Local Mitigation Strategy (LMS) was formally adopted by the county, municipalities, and the LMS Steering Committee in 1999. Initial development of the LMS was funded, in part, by the Florida Department of Community Affairs (FDCA) with Federal Emergency Management Agency (FEMA) funds earmarked for the development of comprehensive hazard mitigation planning.

The LMS was established and continues to operate in accordance with prevailing federal, state and local guidelines and requirements. In 2004 the plan and program were substantially modified to improve operational effectiveness and to comply with new federal guidelines established in response to the Disaster Mitigation Act of 2000.

1.2 PURPOSE

The purpose of the Palm Beach County LMS is to develop and execute an ongoing unified strategy for reducing the community's vulnerability to identified natural, technological and societal hazards. The strategy provides a rational, managed basis for considering and prioritizing hazard-specific mitigation options and for developing and executing sound, cost-effective mitigation projects. The LMS also provides a basis for justifying the solicitation and use of local, state, federal and other monies to support hazard mitigation projects and initiatives.

1.3 PROGRAM ORGANIZATION

1.3.1 Original LMS Structure

The original LMS structure consisted of three levels; (1) the larger body of public agencies, non-profit organizations, private institutions, and members of the public at large interested in participation in LMS activities, (2) the Steering Committee, and (3) subcommittees.

The Steering Committee, the policy and decision body of the LMS consisted exclusively of designated representatives from the county and the 37 municipal jurisdictions. Voting rights were restricted to one officially designated primary member and two alternates from each jurisdiction. Each jurisdiction had one vote on LMS matters and a quorum vote was required for Steering Committee approval. Written notice from the manager/mayor of the jurisdictional governing body to the Chair of the LMS Steering Committee or to the Director, Palm Beach County Division of Emergency Management was required to designate new voting members. While jurisdictions could have multiple voting representatives present at any Local Mitigation Strategy meeting, each jurisdiction was limited to one vote.

While voting on important LMS issues was restricted as described above, attendance and participation in general meetings was open to the community at large.

An LMS Chair and Vice Chair were elected every other year; unlimited successive terms were permissible at the will of the Steering Committee.

The LMS Chair was authorized to establish standing and ad hoc subcommittees as needed to further the goals and objectives of the LMS.

Four subcommittees were established in the early stages of the LMS to assist with initial program and plan development. They included: The *Hazard and Vulnerability Analysis Subcommittee,* the *Outreach and Education Subcommittee*, and the *Financial and Legal Issues Subcommittee*. Over the course of program development, the Outreach and Education Subcommittee evolved and changed its name to the Community Rating System (CRS) Subcommittee to reflect its growing focus on CRS outreach and education and other CRS issues. The Hazard and Vulnerability Analysis Subcommittee and Financial and Legal Issues subcommittees gradually became inactive as the LMS matured, but were subject to reactivation if future needs warranted. A fifth subcommittee, the *Update/Review Subcommittee***,** was created to monitor and evaluate the effectiveness of the LMS and recommend changes to ensure the LMS plan remained current, compliant, focused, and responsive to community interests and needs.

An additional standing subcommittee, the *Evaluation Panel* was established specifically to review, score and prioritize LMS mitigation projects submitted by LMS steering committee members and other partner organizations in accordance with guidelines, procedures and criteria developed early in the program. Under the original project prioritization process, the Panel prepared and submitted Prioritized Project Lists (PPLs) to the Steering Committee for approval and adoption twice a year. With FEMA's issuance of new funding criteria based largely on benefit-cost justifications the role and skill requirements of the Evaluation Panel had to be reexamined.

1.3.2 Revised LMS Structure

In July 2003, the Update/Review Subcommittee was reconstituted as an *Administrative Subcommittee* with the broader mission of providing guidance and assistance necessary to bring the plan and program into compliance with the new federal guidelines and criteria established in response to the Disaster Mitigation Act of 2000 and Title 44 Code of Federal Regulations. This process is explained in **Section 1.2.4**. The group met numerous times over the course of an 18 month period to review FEMA's feedback, expectations and requirements, develop plans and strategies for the revision process, and monitor and review plan revisions. The group's charter was eventually expanded to include taking a critical look at the effectiveness of the overall LMS program. A number of important recommendations and actions emerged from this later responsibility.

Among the Committee's observations were the following:

- The LMS Steering Committee, composed of the County and 37 municipal members, was considered too large and unwieldy to serve as an effective policy and decision body
- Although the county had many active mitigation programs and initiatives, too often they functioned as independent, uncoordinated activities
- Greater attention needed to be given to ensuring mitigation projects were cost-effective and focused on threat-specific mitigation priorities and strategies
- The LMS had failed to effectively tap the county's vast resources and expert-rich public and private sectors.
- The LMS had not adequately explored and used non-traditional sources for potential mitigation funding assistance

- Many of the county's jurisdictions, particularly the smaller municipalities, lack the in-house technical resources, funds, and expertise necessary to effectively execute FEMA's mandated Benefit-Cost analyses
- The plan revision process afforded an excellent opportunity to also reconsider and revamp the LMS program structure and operating philosophy, and
- The increased competition for scarce mitigation assistance funds would undoubtedly place a premium on optimizing program efficiency and responsiveness

In response to these and other considerations, in June 2004 the LMS voted unanimously to adopt and phase into implementation a number of significant program changes and enhancements proposed by the Administrative Subcommittee. Among the executed and/or planned actions are the following:

LMS Steering Committee

Effective July 2004, the LMS Steering Committee was reduced from thirty-seven members to fifteen members. comprised of: seven municipal representatives, two county/local government representatives, one state/federal government representative, one university/college representative, one healthcare industry representative, one non-profit representative, and two representatives from the private sector. The Steering Committee serves as the Local Mitigation Strategy program board of directors. As such, it is the primary decision and policy body for LMS sponsored mitigation activity.

LMS Working Group

The LMS Working Group is comprised of the full body of the LMS, representing a broad cross-section of public sector and private sector organizations and individuals, including the general public. The Working Group serves as an umbrella organization for coordinating all mitigation programs and activities, supplies the staffing and expertise for the standing and ad hoc committees of the LMS, and is the primary mechanism and forum for exchanging information and mobilizing the vast expertise and resources of the community.

Standing Committees

After submission of the 2004 plan several standing LMS committees were established for the purpose of facilitating, bolstering, and supporting LMS activities. These included:

- Evaluation Panel, designated to review, evaluate, score and rank mitigation projects applying established local, state and federal prioritization processes and criteria.

- Flood Mitigation Technical Advisory Committee, comprised of flood mitigation engineers and experts from public and private sector organizations, is charged with assessing county-wide flood risks and vulnerabilities without regard to jurisdictional boundaries and recommending flood mitigation priorities, strategies, plans and projects for LMS consideration and action that optimally benefit to the greater community.

- Flood Mitigation Committee – CRS Outreach Subcommittee, comprised of representatives from the county's 26 CRS communities, who collaborate on a full range of Outreach Projects Strategy (OPS) initiatives and promote CRS participation

Ad Hoc Committees

In addition, two ad hoc committees were formed:

- Plan Integration Committee charged with monitoring the LMS plan for compliance and assisting with the linkage between the LMS and other local plans, and supporting plan updates and revisions.

- Administrative Committee, originally established to facilitate and assist the LMS plan revision process in response to the new federal guidelines evolving from DMA2000. The committee was also charged with serving as an interim decision body for the LMS until the Steering Committee was formally reorganized and functioning.

1.4 LMS PARTICIPATION REQUIREMENTS

Since the Unified Local Mitigation Strategy is written directly from input from all meetings, it is important to make sure that the entire Palm Beach County community is represented. The following groups are invited to all Local Mitigation Strategy meetings. Each group has different participation requirements; however, all groups are strongly encouraged to participate in the planning process.

Jurisdictions

Municipal and county participation are critical to the success of the LMS. In order to retain LMS voting rights, qualify for federal mitigation assistance consideration, and otherwise remain a member in good standing, the county and all municipal jurisdictions are expected to conform to the following standards:

- Participation of the representative or officially designated alternate(s) in three (3) out of four (4) Steering Committee meetings where plan revisions will be addressed;

- Consecutive absences will be cause for disqualification for the LMS, subject to appeal and review by the LMS Chair. All rights and privileges will be terminated during a period of disqualification and formal reapplication;

- Participation in subcommittee meetings may be substituted for Steering Committee attendance in meeting the 3 out of 4 rule pending approval by the Chair;

- Subject to pre-meeting and post-meeting roll calls, participation in special conference call meetings of the Steering Committee or subcommittees will be credited for purposes of participation; and

- Have a dully executed resolution adopting the revised LMS plan on file with the county and the LMS.

- In order for a jurisdiction to be eligible for Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA) and Pre-Disaster Mitigation (PDM) funding programs, they must have an executed resolution/interlocal agreement adopting the LMS on file with the LMS and have participated in the revision process. **Appendix H** includes the

Board of County Commissioners agenda item summary, along with a copy of all executed adoption resolutions.

Non-Governmental Organizations (NGO's) and other Governmental Entities

In order to qualify for LMS grant sponsorship, NGO's and other governmental entities must:

- Have an dully executed letter of commitment to the LMS on file with the county and LMS; and

- In the judgment of the LMS Steering Committee, actively participate in and otherwise support LMS activities.

The Public and Private Sector

The Palm Beach County Unified Local Mitigation Strategy believes broad community support, including ongoing public and private sector involvement, is very important to the success of the program. While participation by private organizations and the general public is strictly voluntary, their attendance, comments, contributions, and support are actively invited, sought, monitored and fully documented.

In order to promote the opportunity for broad participation, at a minimum, notices and agendas for all general meetings of the LMS are posted through some combination of the following: newspaper ads or public service announcements; postings on county and municipal websites, announcements on the county's TV station (Channel 20), postings in county and municipal newsletters and calendars, and blast faxes and e-mailings to all previous participants.

1.5 JURISDICTIONAL ADOPTION OF THE LMS

Adoption of the LMS is subject to the following FEMA requirements:

Requirement §201.6(c)(5): The local hazard mitigation plan **shall** include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commissioner, Tribal Council).

***Requirement §201.6(c)(5)*:** *For multi-jurisdictional plans, each jurisdiction requesting approval of the plan **must** document that it has been formally adopted.*

Requirement §201.6(a)(3): Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process … Statewide plans will not be accepted as multi-jurisdictional plans.

All jurisdictions wishing to participate in and share in the benefits deriving from the LMS program must complete and file a fully executed resolution (see Appendix H) which conforms to the adoption standards jointly established and amended by the Palm Beach County Board of County Commissioners and the LMS Steering Committee. Resolutions are kept on file by the Minutes Section of the Office of the Clerk of the Circuit Court.

1.6 NEW JURISDICTIONS/ENTITIES

In the event municipal jurisdictions are added, deleted, or merged within the county, the LMS will appropriately adjust its member rolls as necessary and require any newly defined jurisdictions to provide documentation necessary for participation in the program. A new municipal jurisdiction *(Loxahatchee Groves) was incorporated in November of 2006 a subsequently joined the LMS.*

SECTION 2: GUIDING PRINCIPLES

The LMS guiding principles are an expression of the community's vision of hazard mitigation and the mechanisms through which it is striving to achieve that vision. The principles address concerns of the community relative to natural, man-made, and environmental hazards.

2.1 METHODOLOGY

In formulating the guiding principles for the LMS, several techniques were employed. One involved a review of appropriate plans, policy statements, laws, codes, and ordinances of each participating local jurisdiction. As part of this process, a survey was distributed to each local jurisdiction. The surveys provided information about the jurisdiction's development plans and regulations, and hazard mitigation projects they have implemented. With 37 local jurisdictions involved, defining a community-wide vision became far more complex than one local government defining its mission for local hazard mitigation. Therefore, a facilitated discussion with the Steering Committee was conducted. Using this approach, a comprehensive list of hazards of concern to the local governments was developed. From these defined hazards, the Working Group identified areas of concern. These areas of concern included:

- Loss of life
- Loss of property
- Community sustainability
- Health/medical needs
- Sheltering
- Adverse impacts to natural resources (e.g., beaches, water quality)
- Damage to public infrastructure (e.g., roads, water systems, sewer systems, stormwater systems)
- Economic disruption
- Fiscal impact
- Recurring damage
- Redevelopment/reconstruction
- Development practices/land use
- Intergovernmental coordination
- Public participation
- Repetitive flood loss properties
- Historical structures

These concerns, along with information generated from the inventory of local planning documents and ordinances, led to the mitigation goals and objectives established in **Section 2.3**.

Palm Beach County's Unified Mitigation Strategy is built upon comprehensive processes including multi-jurisdictional hazard identification, risk and impact analyses, program capability assessments, operational and disaster experience and cost-benefit analyses. These processes, and their results to date, are described in **Section 3** of the LMS and in the Situation Section of the Comprehensive Emergency Management Plan. These processes are applied on an ongoing basis and additions and changes are reflected in revisions to the LMS plan. Hazards most likely to affect each of the county's jurisdictions, the risks those hazards pose to each jurisdiction, the potential impacts of those hazards, jurisdictional capabilities to implement and support mitigation strategies, and cost-benefit analyses of mitigation strategies and projects are integral

considerations in developing, prioritizing and implementing mitigation strategies and initiatives at the county and municipal level.

2.2 PROCESS

The strategy used for the development and revision process of the Palm Beach County Unified Local Mitigation Strategy Plan, consisted of the following tasks:

1. Public involvement to ensure a representative plan
2. Coordination with other agencies or organizations
3. Hazard area inventory
4. Risk and Vulnerability Assessment
5. Coordinated and Integrated Programs and Plans within LMS
6. Review and analysis of possible mitigation activities
7. Local adoption following a public hearing
8. Periodic review and update

This hazard mitigation plan contributes to the overall mitigation strategy outlined above and illustrated in **Figure 2.1** Planning Process Diagram. The Palm Beach County Unified Local Mitigation Strategy summarizes the activities to assess the effects of storm flooding, hurricanes, and all other hazards specific to our area and recommends mitigation activities. In following this strategy, all areas are addressed to reduce the amount of damage after a hazard occurs through mitigation efforts. Participation is encouraged by any individual, agency, organization and jurisdiction who would like to take part in the planning process defined in **Section 1**.

All parties are encouraged to participate in the revision planning process occurring at "Steering Committee" meetings with suggestions, comments, involvement and feedback documented from all participants. To ensure all jurisdictions, organizations, and the public are represented throughout the entire revision of the planning process, each meeting will be operated in accordance to Robert's Rules of Order. These procedures are in place to meet the overall objective of the LMS which is to have a plan representative of the entire county and to be a true Unified Local Mitigation Strategy.

The Disaster Mitigation Act of 2000 set new requirements to be met in all mitigations plans across the country. The LMS Working Group decided the work would be completed by the Administrative sub-committee. The meetings were open to anyone who wished to participate. Direction to meet all new requirements were discussed by the Steering Committee. The direction was established through a series of sub-committee meetings. The sub-committee sent requests out to all communities to review and update charts, and to complete a narrative about mitigation initiatives within each community. In addition, all communities were asked to review new additions to the plan for comment and recommendation. However, the LMS Working Group, ultimately made the final decision. The public was invited to all LMS Working Group meetings to comment before any changes were finalized within the mitigation plan. Also a

diagram below illustrates all the components that made up the new planning process for the Disaster Mitigation Act of 2000 requirements. The original planning process documenting public involvement can be located in **Section 4.2**.

2.3 MITIGATION STRATEGIES

Palm Beach County's unified LMS encompasses diverse mitigation strategies, including, but not limited to: hazard elimination, hazard reduction, hazard modification, control of hazard release, protective equipment, establishment of hazard warning/communication systems and procedures, redundancy of critical resources and capabilities, mutual aid agreements and public-private partnership initiatives, contract services and resources, construction and land-use standards, and training and education.

2.4 MITIGATION GOALS AND OBJECTIVES

All mitigation goals and objectives must be consistent with the goals and objectives of the county and the individual jurisdictional comprehensive plans, codes and ordinances, as well as any other jurisdictional documents reflecting aspirations for the welfare, safety and quality of life of their citizens.

In a county as large and diverse as Palm Beach County, no single list of mitigation goals is going to encompass every conceivable mitigation goal and objective. The overall objective is to reduce the vulnerabilities to hazards which directly affect Palm Beach County. In so doing, the following goals will serve provide guidance to the LMS:

2.4.1 Goals

- Reduce the loss of life, property, and repetitive damage from the effects of natural, societal and technological hazards from all sources but especially hurricanes, tornadoes, major rainfall and other severe weather events

- Achieve safe and fiscally sound, sustainable communities through thoughtful long-range planning of the natural and man-made environment

- Take preventative actions to reduce the number of repetitive loss properties published annually by FEMA on the list of "Repetitive Loss Properties"

- Qualify the county and jurisdictions for incremental improvements on the Community Rating System classification in relation to flood insurance under the National Flood Insurance Program (NFIP) and to reduce flood hazards

- Optimize the effective use of all available resources by establishing public/private partnerships, and encouraging intergovernmental coordination and cooperation

- Promote awareness and preparedness through the distribution of information on hazards and measures to mitigate them

- Increase the level of coordination of mitigation management concerns, plans and activities at the municipal, county, state and federal levels of government in relation to all hazards

- Establish a program that facilitates orderly recovery and redevelopment, and minimizes economic disruption following a disaster

- Ensure an enforceable commitment for the implementation of the local hazard mitigation strategy

2.4.2 Objectives

The ultimate objectives of the LMS are to:

- Improve the community's resistance to damage from known natural, man-made, and environmental hazards

- Place Palm Beach County in a position to compete effectively and productively for pre and post-disaster mitigation funding assistance

- Encourage strong jurisdictional, nongovernmental and public participation and support of LMS activities

- Reduce the cost of disasters at all levels

- Facilitate community recovery when disasters occur

- Minimize recurrence of damage by incorporating mitigation into post disaster rebuilding

- Promote intelligent development

2.4.3 Benefits

Adoption of this strategy will provide the following benefits to both County and municipal governmental entities:

- Compliance with Administrative Rules 9G-6 and 9G-7, Florida Administrative Code (F.A.C.), requirements for local comprehensive emergency management plans to identify problem areas and planning deficiencies relative to severe and repetitive weather phenomenon, and to identify pre and post-disaster strategies for rectifying identified programs

- Universal points from the National Flood Insurance Program's (NFIP) Community Rating System (CRS) Program for developing a Floodplain Management Program, which may help further reduce flood insurance premium rates for property owners

- Access to FEMA's Federal Mitigation Assistance grant program, which provides funding for pre-disaster mitigation projects and activities

- Compliance with the Disaster Mitigation Act of 2000 allowing Palm Beach County to compete competitively for grant money;

- Identify and prioritize projects for funding under the State of Florida's Residential Construction Mitigation Program, to help reduce losses from repetitive flooding damage

- Set forth the guiding principles with which both the County and municipal governmental entities of Palm Beach County will address the issue of all hazard mitigation (**Section 2.0,** Guiding Principles)

- Identify the known hazards to which the county is exposed, discuss their range of impacts, and delineate the individual vulnerabilities of the various jurisdictions and population centers within the county (**Section 3. 0,** Hazard Identification and Vulnerability Analysis)

- Review and evaluate the existing legal, regulatory, and response framework currently in place to deal with hazard mitigation (**Section 4. 0,** Inventory and Evaluation of Existing Hazard Management Goals, Policies, Procedures, Ordinances, Projects, and Activities)

- Develop a detailed method by which Palm Beach County (municipalities and County government) can evaluate and prioritize proposed mitigation projects along with new federal requirements (**Section 5.0,** Project Prioritization Methodology)

- Develop a conflict resolution procedure by which municipalities and county governmental entities can resolve any differences that arise over prioritized mitigation projects or mitigation strategies (**Section 6. 0,** Conflict Resolution Procedures)

- Develop the process and schedule by which this entire Unified Local Mitigation Strategy will be reviewed and updated (**Section 7 .0,** Review and Revision Procedures for the Palm Beach County Local Hazard Mitigation Strategy)

- Ensures jurisdictional plans are consistent and supportive

Figure 2.1 Planning Process Diagram

SECTION 3: HAZARD IDENTIFICATION AND VULNERABILITY ANALYSIS

This section represents an update of the 2004 hazard and vulnerability analysis. It addresses, in part, the following FEMA requirements:

RISK ASSESSMENT: §201.6(c)(2): The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.

Requirement §201.6(c)(2)(i): The risk assessment **shall** include a description of the type … of all natural hazards that can affect the jurisdiction.

Requirement §201 .6(c)(2)(i): The risk assessment **shall** include a description of the … location and extent of all natural hazards that can affect the jurisdiction. The plan **shall** include information on previous occurrences of hazard events and on the probability of future hazard events.

Requirement §201.6(c)(2)(ii): The risk assessment **must** also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods.

Requirement §201. 6(c)(2)(ii): The risk assessment **shall** include a description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.

3.1 HAZARD IDENTIFICATION

Section 3.1 and Table 3.1 lists the general hazards to which Palm Beach County is vulnerable and indicates their projected impact potential across the entire spectrum of community exposure and services. **Section 3.1, Hazard Identification**, describes these hazards in detail and discusses county-wide exposures; **Section 3.2**, **Vulnerability Assessment**, discusses specific vulnerabilities faced by the individual governmental entities, County and City, forming the Palm Beach County community. Vulnerability, probability, and risk assessments for the county and municipal jurisdictions, and a county-wide impact analysis are contained in **Appendix A . Section 3. 3, R isk Assessment**, describes the elements considered in the risk assessment process. Hazard & Risk Assessment Maps, accompanying narratives, and potential loss values for the county and each jurisdiction are located in **Appendix C**.

Disasters are classified by the magnitude of their effect. The recognized classification system is as follows:

- *Minor Disaster* - Any disaster that is likely to be within the response capabilities of local government and results in only minimal need for state or federal assistance.
- *Major Disaster* - Any disaster that will likely exceed local capabilities and require a broad range of state and federal assistance. The Federal Emergency Management Agency (FEMA) will be notified and potential federal assistance will be predominantly recovery-oriented.

- *Catastrophic Disaster* - Any disaster that will require massive state and federal assistance, including immediate military involvement.

The hazards identified in **Table 3.1** and discussed in **Section 3.1** are organized based on their maximum projected impact potential. This means that hazards capable of producing the maximum community-wide impact, such as hurricanes and floods, are discussed first. This does not mean other identified hazards are less important or less worthy of mitigation, it simply means that their potential to affect the total community is lower.

3.1.1 Natural Hazards

Figure 3.1 summarizes property damage caused by the most significant natural hazards faced by Palm Beach County from 1950 to the present.

Table 3.1 Identification and Projected Impact Potential for Hazards

Hazard Category	Projected Impact Potential																			
	Excessive Wind	Excessive Water	Damaging hail	Soil/beach erosion	Electric power outage	Surface and air transportation	Navigable waterway impairment	Potable water system loss or disruption	Sewer system outage	Telecommunications system outage	Human health and safety	Psychological hardship	Economic disruption	Disruption of community services	Agricultural/fisheries damages	Damage to critical environmental resources	Damage to identified historical resources	Fire	Toxic releases	Storm water drainage impairment
NATURAL																				
Flood		√		√	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√
Hurricane/Tropical storm	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Tornado	√				√	√				√	√	√	√							
Severe thunderstorm	√	√	√		√	√				√	√	√	√					√		√
Drought													√		√	√		√		
Temperature extremes					√						√	√	√		√	√				
Agricultural pest/disease											√	√	√		√	√				
Wildfire					√	√				√	√	√	√	√	√	√		√	√	
Muck Fire						√					√		√		√	√		√	√	
Soil/beach erosion				√			√						√			√				√
Seismic hazards						√													√	

Hazard Category	Projected Impact Potential																		
	Excessive Wind	Excessive Water	Damaging hail	Soil/beach erosion	Electric power outage	Surface and air transportation	Navigable waterway impairment	Potable water system loss or disruption	Sewer system outage	Telecommunications system outage	Human health and safety	Psychological hardship	Economic disruption	Disruption of community services	Agricultural/fisheries damage	Damage to critical environmental resources	Damage to identified historical resources	Fire	Toxic releases	Storm water drainage impairment
TECHNOLOGICAL																			
Hazardous material accident						√					√	√	√					√	√	
Radiological accidents (nuclear power plant)					√	√				√	√	√	√	√		√			√	
Communications failure										√			√	√						
Hazardous material release						√					√	√	√	√				√	√	
Transportation accident						√	√				√		√	√				√		
Wellfield contamination								√	√		√	√	√	√						
Power failure (outage)					√	√		√	√	√	√	√	√	√						
SOCIETAL																				
Civil disturbance						√					√	√	√	√			√			
Terrorism and sabotage					√	√		√		√	√	√	√			√	√	√	√	
Immigration crisis											√	√	√	√						

3.1.1.1 Flooding

Frequencies from flooding associated with rain events other than tropical storms and hurricanes are more difficult to estimate. Eastern Florida shows an annual dry cycle stretching from early November through mid-May. During this part of the year, monthly rainfall rarely exceeds 3.5 to 4.0 inches per month. The wet season, beginning in mid-May and running through late October, shows monthly rainfall levels in the area to be 6.0 to 8.5 inches. Heaviest rainfall usually occurs in June and September. In Palm Beach County, the eastern or coastal section of the county receives more rain than the western section. This rainfall pattern coupled with the hurricane season (June through November) makes Palm Beach County particularly vulnerable to flooding associated with late season tropical storms and hurricanes because they typically occur when the water table is high and the ground is saturated. More information is available through the Palm Beach County Flood Information website accessible at: www.pbcgov.com/pubsafety/eoc.

Historical Flooding Events

Flood of Fall 1947. This flood is generally considered to be the most severe flood recorded in southern Florida. Heavy rainfall, including the rains from two hurricanes, occurred over a period of five months. Many parts of Palm Beach County were flooded for months and there was extensive damage to dairy pastures and agriculture in general. Such a flooding event would be much more significant today because of the increase in land development.

Flood of October 1953. As occurred in 1947, this flood was preceded by five months of heavier than normal rainfall which included a tropical storm in October. June through October rainfall was approximately 48 inches. Damage was heaviest in the beef cattle industry, with extensive losses of improved pasture land which required supplemental feeding of cattle. Vegetable growers and dairy farmers also suffered significant losses as a result of this flood.

Rains of January 1957. On 21 January 1957, Palm Beach County received 9 to 21 inches of rainfall within a 24-hour period. There was severe flooding in the vegetable garden areas of the county and much crop damage. Some fields had to be pumped out. Local crop damage was estimated at $1,000,000.

Flood of June 1959. Heavy rains fell across most of central Florida from 17 June through the 21st. These rains were associated with and followed a tropical depression, and caused extensive flooding in poorly drained, low-lying agricultural areas and some residential sections. Considerable pasture land and some citrus land in Palm Beach County were inundated. Some highways also sustained damage from these flood waters.

Rains of October 1966. On 22 October 1966, heavy rains ranging from eight to ten inches over a 24-hour period destroyed approximately 4,300 acres of vegetable crops.

Rains of March 1982. On 28 and 29 March 1982, Palm Beach County was subjected to a severe coastal storm with heavy rains and high winds. Lantana measured 16 inches of rain over a 24-hour period. High seas sunk a Haitian freighter and a total of 11 people were drowned.

The Great Thanksgiving Holiday East Coast Storm of 1984. A strong low pressure system developed east of Florida and coupled with a high pressure system to produce an extremely strong pressure gradient leading to gale force winds and high seas along the entire Florida east coast. Heavy rains fell over most of central Florida, and this surface runoff, coupled with the wind packing of seawater along the coast resulted in extensive coastal erosion and flooding. Many coastal structures were damaged or destroyed, including several in Palm Beach County.

Flood of January 1989. On 21 and 22 January 1989, Palm Beach County experienced a gale with subtropical storm characteristics that caused extensive beach erosion and dropped four to six inches of rain across the county. This caused ponding of water in low-lying areas. Several homes and a motel were damaged. Road flooding caused several accidents.

The Unnamed Storm of October 1995. Almost exactly one year after the Hurricane Gordon flooding incident in 1994, a stalled frontal system dropped over 15 inches of rain on Palm Beach County over a period of 39 hours. In the intervening year between these two events, some communities in Palm Beach County had conducted a number of mitigation projects and initiatives designed to improve drainage and prevent flooding in known flood prone areas. These mitigation projects and initiatives undoubtedly reduced the extent of flooding and flood

related damages during the 1995 flooding event, nevertheless, the county did experience significant flooding again in 1995.

Unnamed Storm of January 1999. On Saturday 2 January of 1999, a cold front stalled over the northern part of Palm Beach County. Warm, moist air from the Bahamas became intrained in this frontal system and produced a fairly localized, intense rain event in northern Palm Beach County. Initial reports indicated 31 inches of rain in a 12-hour period. This later turned out to be an erroneous reading from the recording instrument involved; however, it is generally recognized that between 18 and 22 inches of rain fell in the northern third of the county over a 12 to 18 hour period. Flooding was even more extensive than in the 1995 event, but it is interesting to note that many areas where flooding mitigation projects had been implemented remained dry, or showed a minimum of damage compared to areas where planned mitigation had not yet been implemented. Hardest hit were the Riviera Beach and Lake Park jurisdictions with a total of over $6,000,000 damage between them. Flooding was extensive along Northlake Boulevard. Erosion caused the collapse of a portion of I-95 that was under construction. **Table 3.2** shows the final damage assessment in Palm Beach County from this storm.

Record Rainfall June - July 2002. On July 14, 2002 a record 37 consecutive days of rain came to a conclusion. The combined June - July rainfall total was six inches below the all time record. June rainfall was 20.16" (12.5% above normal). The county experienced five days of one inch or more rain. The water level in Lake Okeechobee rose to 13.57 feet. Because this rainy period was preceded by an extended dry period and rains were spread over several days, flooding was limited to street flooding.

Hurricane Frances September 4, 2004. A maximum storm-total rainfall amount of 13.56 inches was measured at West Palm Beach International Airport with 10.36 inches occurring in a 24-hour period. Unofficial storm-total rainfalls included 9.56 inches at Boynton Beach, 8

inches at Deerfield Beach and 7.18 inches at the Hillsboro Canal. Widespread storm-total amounts of three to five inches occurred in southeast and interior south Florida with southwest Florida averaging one to three inches. Rainfall flooding was mostly minor except for a few locations in Palm Beach County which had up to three feet of standing water. A section of I-95 in Palm Beach County was closed due to a large sinkhole. Within the confines of the Herbert Hoover Dike, water levels on Lake Okeechobee fluctuated up to five feet above and below normal.

Hurricane Jeanne September 25, 2004. A SFWMD gage measured a maximum storm-total rainfall amount of 10.22 inches over the eastern portion of Lake Okeechobee. A SFWMD gage about four miles west of West Palm Beach International Airport measured 9.10 inches with 8.79 inches of that occurring in a 24-hour period. At Moore Haven, 5.99 inches of rain was measured. Widespread storm-total amounts of one to four inches occurred in most of southeast and interior south Florida with Miami-Dade County and Collier County averaging one half to one inch. Mostly minor rainfall flooding was observed except locally in Palm Beach Gardens, Jupiter and in the farmlands of western Palm Beach County where it was more severe. Within the confines of the Herbert Hoover Dike, water levels on Lake Okeechobee fluctuated up to seven feet above and below normal causing severe flooding of some marinas.

Flood of June 5, 2005. Eight inches of rain in three hours caused flooding in streets and businesses in Boca Raton and in Highland Beach. Cars were stalled and Federal Highway was closed for a nine-block section from NE 20 to NE 29 Street.

Hurricane Wilma October 24, 2005. Rainfall amounts across South Florida generally ranged from two to four inches across southern sections of the peninsula to four to six inches across western Collier County and around Lake Okeechobee, with a maximum amount of 7.31 inches in Clewiston. There was scattered street flooding.

Flood of December 14, 2006. A slow-moving low pressure trough caused very heavy rains and significant flooding over parts of Palm Beach County. West Palm Beach International Airport received a total of 8.21 inches of rain ending at 7 PM on the 15th. Other locations in Central and Southern Palm Beach County received between six and eight inches of rain. Northern Broward County received lesser amounts in the two to three inch range. Several streets and roads were closed in the city of West Palm Beach, with water reaching up to three feet deep in some areas. Hardest hit was the neighborhood of Pineapple Park. Many vehicles were stranded in the deep water, with local police receiving about 120 calls for assistance. No significant damage was reported to property despite water entering homes and businesses. Florida Power and Light reported 20,000 customers without power during the afternoon and early evening hours. Shelters were opened for people left homeless by the floods, but only five people arrived as of 8:30 PM.

Flood of January 22, 2008. Intense rains affected Boynton Beach and the northwest section of Delray Beach during the late afternoon and evening hours of January 22nd. Maximum observed rainfall amounts were between four and si inches in Boynton Beach, although Doppler radar estimated as much as ten inches of rain fell in just over three hours. Numerous reports of flooding were reported. A trained spotter reported water getting into houses in the corridor west of Federal Highway and east of Congress Avenue between

Boynton Beach Boulevard and Woolbright Road. Water rose to as high as two feet along sections of Congress Avenue. Significant flooding was reported at the parking lot of Boynton Beach mall. The I-95 on-ramp at Gateway Boulevard was closed due to the water depth, as were sections of Boynton Beach Boulevard. Dozens of vehicles stalled and 40 traffic accidents were reported due to the rain and standing water. The combination of a mid and upper level trough moving east across South Florida and a developing warm frontal boundary provided the necessary atmospheric conditions for intense rains and flooding in the Boynton Beach area on January 22nd.

March 22, 2008. Heavy rain across the Wellington area produced multiple reports of knee deep water in yards and across roadways. Heavy rain across central portions of Palm Beach County including the Wellington area produced flooded roads and water approaching a structure.

May 24, 2008. Flooding reported at the intersection of Linton Boulevard and Congress Avenue making the intersection impassable. Flooding also reported along Nassau Street with water intruding into some homes. Flood waters were near two feet deep at some locations. A shortwave moved across South Florida during the afternoon hours allowing multiple severe thunderstorms to develop across southeast Florida. A total of 8,300 customers lost power due to the severe thunderstorms in the three-county area of Palm Beach, Broward and Miami-Dade counties.

It is important to note that many of the areas that experienced flooding in both the 1994 and 1995 rainfall events were not in designated flood zones. For those areas where the Flood Insurance Rate Maps (FIRM) did indicate a flooding hazard, these two events both exceeded the 100-year storm levels and occurred back-to-back. The 1999 event was extremely localized, but rainfall exceeded all previous records in specific areas, and was beyond the design

capacity of virtually all drainage systems in the county.

Often when these types of intense rainfall events occur, streams and drainage ditches tend to reach peak flood flow concurrently with tidal water conditions associated with coastal storm surge. This greatly increases the probability of flooding in the low-lying areas of the coastal zone. Areas along the Intracoastal Waterway are particularly susceptible to flooding under these conditions. The most flood prone areas in the eastern portion of the county feature poorly drained soils, a high water table, and relatively flat terrain; all of which contribute to their flooding problems. Flat terrain and heavily wooded areas aggravate flood problems by preventing rapid drainage in some areas.

Flood Water Sources and Frequency of Occurrence

Sources of flood waters in Palm Beach County include:

- The Atlantic Ocean;
- The Intracoastal Waterway;
- Lake Okeechobee;
- The West Palm Beach Canal;
- The Hillsboro Canal;
- The North New River Canal; and
- The Miami Canal.

Major water retention areas include:

- Corbett Wildlife Management Area;
- Loxahatchee Wildlife Refuge and WCA No. 2; and
- The Rotenberger/Holey Land Area.

Floodplains designated on the FIRM are based on the 1% annual flood chance or the 100-year flood event. The 500-year flood event with a 0.2 % annual chance of occurrence is used to designate other areas of the community, which may have some vulnerability to flooding. Additional flood information is addressed in **Section 4.1.4.1.**

Table 3.2 Final damage assessment from the January 1999 storm.*

Jurisdiction or Geographic Area	Number of Structures Damaged	Residential and Business Loss	Public Infrastructure Loss	Total Jurisdiction Loss
Unincorporated Palm Beach County	94	$884,000	$119,655	$1,003,655
Lake Park	3	$2,008,200	$67,000	$2,075, 200
Riviera Beach	201	$3,927,075	$38,000	$3,965,075
Palm Beach Gardens	136	$675,400	$13,000	$688,400

Jurisdiction or Geographic Area	Number of Structures Damaged	Residential and Business Loss	Public Infrastructure Loss	Total Jurisdiction Loss
North Palm Beach	25	$40,000	B	$40,000
North Jupiter	1	B	B	--
Northern Palm Beach Improvement District	B	B	$51,000	$51,000
Total County Losses	460	$7,534,675	$288,655	$7,823,330

* Data from Palm Beach County Division of Emergency Management.

3.1.1.2 Hurricane/Tropical Storm

For many years, the risk of significant loss of life and property due to hurricanes seemed small. Many, if not the majority, of existing homes and businesses along the U.S. Atlantic and Gulf Coasts were constructed during the 1970s and 1980s, a period of relatively inactive hurricane formation. Most of the people currently living and working in coastal areas have never experienced the impact of a major hurricane. Hurricanes that impacted Florida during the 1970s and 80s were infrequent and of relatively low intensity. Homeowners, business interests, and government officials grew to regard hurricane risk as manageable by private insurance supplemented occasionally by federal disaster funding and subsidized flood insurance. The hurricane risk did not seem sufficient to warrant increased investment in mitigation. Two major hurricanes, Hugo in 1989 and Andrew in 1992, forced a reevaluation of this risk assessment. While experts sometimes disagree on the annual cost of hurricane damage, all sources agree that hurricane Andrew was the most costly hurricane event ever to affect the U.S. Insured losses from hurricane Andrew topped $17 billion and most sources agree that the total cost of hurricane Andrew exceeded $25 billion.

Florida is the most vulnerable state in the nation to the impacts of hurricanes and tropical storms. South central Florida is particularly exposed to the dangers presented by hurricanes, due to its topography. The region is largely a flat, low lying plain. The potential for property damage and human casualties in Palm Beach County has been increased by the rapid growth of the county over the last few decades, particularly along the coastline. Population risk has also been exacerbated by some complacency due to the recent period of reduced hurricane frequency.

Florida not only has the most people at risk from hurricanes, but it also has the most coastal property exposed to these storms. Over the fourteen year period between 1980 and 1993, Florida's population increased by 37% while the value of insured residential property rose from $178 billion in 1980 to $418 billion in 1993, an increase of 135%. During this same time period, the insured value of commercial property rose from $155 billion to $453 billion, an increase of 192%. Dade, Broward, and Palm Beach Counties alone account for $370 billion in insured property (42% of Florida's total). Palm Beach County had 6 major hurricanes between 1900 and 1950. The peak winds reached 120 -140mph.

Hurricanes are tropical cyclones with winds that exceed 74 mph and blow counter-clockwise

around their centers in the Northern Hemisphere. They are essentially heat pumping mechanisms that transfer the sun's heat energy from the tropical to the temperate and polar regions. Hurricanes are formed from thunderstorms that form over tropical oceans with surface temperatures warmer than 81° Fahrenheit (26.5° Celsius). The ambient heat in the sea's surface and moisture in the rising air column set up a low pressure center and convective conditions that allow formation of self sustaining circular wind patterns. Under the right conditions these winds may continue to intensify until they reach hurricane strength. This heat and moisture from the warm ocean water is the energy source of a hurricane. Hurricanes weaken rapidly when deprived of their energy source by traveling over land or entering cooler waters.

Since 1886, 51 storms of hurricane intensity have passed within 125 miles of Palm Beach County. This represents an average of one hurricane every two years. The number of direct hits on the southeastern Florida coastline between 1899 and 1999 has been as follows:

- Category 1 Storms: (winds 74 to 95 mph) = 4 storms (4 % annual probability);
- Category 2 Storms: (winds 96 to 110 mph) = 10 storms (10% annual probability);
- Category 3 Storms: (winds 111 to 130 mph) = 7 storms (7% annual probability);
- Category 4 Storms: (winds 131 to 155 mph) = 6 storms (6% annual probability);
- Category 5 Storms: (> 155 mph) = 1 storm (1% annual probability).

A storm surge is a large dome of water often 50 to 100 miles wide and rising anywhere from four to five feet in a Category 1 hurricane up to 20 feet in a Category 5 storm. The storm surge arrives ahead of the storm's actual landfall and the more intense the hurricane is, the sooner the surge arrives. Water rise can be very rapid, posing a serious threat to those who have waited to evacuate flood prone areas. A storm surge is a wave that has outrun its generating source and become a long period swell. The surge is always highest in the right-front quadrant of the direction the hurricane is moving in. As the storm approaches shore the greatest storm surge will be to the north of the hurricane eye.

Such a surge of high water topped by waves driven by hurricane force winds can be devastating to coastal regions. The stronger the hurricane and the shallower the offshore water, the higher the surge will be. In addition, if the storm surge arrives at the same time as the high tide, the water height will be even greater. The storm tide is the combination of the storm surge and the normal astronomical tide.

Damage during hurricanes may also result from tornadoes and inland flooding and heavy rainfall that usually accompanies these storms. Hurricane Andrew, a relatively "dry" hurricane, dumped ten inches of rain on south Florida and left many buildings extensively water damaged. Rain water may seep into gaps in roof sheathing and saturate insulation and ceiling drywall, in some cases causing ceilings to collapse.

Aside from direct property damage, the potential for crop damage and economic disruption from hurricanes and tropical storms is significant. Tropical Storm Mitch dropped as much as 10 inches of rain in some south Florida areas, which resulted in approximately $20 million in direct crop damage in Palm Beach County. The largest monetary loss, however, was sustained by the sugar cane mills in the western part of the county, where contracted part-time help and union workers must be paid whether or not the mills run. The six mills in Palm Beach County and the one in Hendry combined lost about $500,000 a day in wages. The mills remained down until the fields dried out.

Palm Beach County has 671 listed farm proprietors with approximately 8,000 employees and a total annual payroll of $13,894,000. The county has approximately 637,934 acres of farm land currently valued at $2,417,525.

Historical Hurricane/Tropical Storm Events

Hurricane of September 1903. This hurricane made landfall near West Palm Beach on 11 September 1903 and exited the state near Tampa Bay on the 12th. Maximum recorded winds were only 78 mph, however 14 deaths were attributed to this storm and one ship was wrecked near Jupiter. Damages specific to Palm Beach County are not recorded.

Hurricane of July 1926. A Category 1 hurricane with winds of 90 mph made landfall near Jupiter on the morning of 27 July 1926. This hurricane circled inland along Florida's east coast and exited the state at the Florida/Georgia border on 28 July. By that time it had been downgraded to a tropical storm. Palm Beach County experienced high winds and flooding.

Hurricane of September 1928. This hurricane made Florida landfall near the Town of Palm Beach as a strong Category 4 hurricane with one of the lowest barometric pressures ever recorded in this area (928.9 millibars/27.43 in). This was the 5th most intense hurricane ever to make landfall in U.S. territory. It reached Lake Okeechobee with very little diminished intensity and moved across the northern shoreline. This sent a massive storm surge southward flooding lower areas on the southern and western edge of the lake. In excess of, 2,500 people were killed during this storm's passage. Nearly all the loss of life was in the Okeechobee area and was caused by overflowing of the lake along its southwestern shore. While all of central Florida was affected by this killer storm, Palm Beach County mainly experienced wind damage and flooding from the associated rains.

Hurricane of September 1933. This major, Category 3 hurricane passed over Jupiter Island with a barometric pressure of 947.5 millibars (27.98 in). Maximum winds recorded were 127 mph. There was considerable property damage all along the Florida east coast, mostly in the area between Jupiter and Fort Pierce. Severe waterfront damage was reported in Stuart. Minimal damage was reported from Palm Beach County, although there was some flooding in the lower areas of the county.

Hurricane of August 1939. A weak hurricane made landfall near Fort Pierce on the morning of 11 August and crossed the state in a northwesterly direction exiting to the Gulf of Mexico near Crystal River on the 12th. Minimal damage and flooding was experienced in Palm Beach County.

Hurricane of June 1945. This hurricane entered Florida from the Gulf of Mexico making landfall near Cedar Key and moving east-northeast to exit the state near St. Augustine. Palm Beach County received heavy rains and high winds from this storm.

Hurricane of August 1949. This Category 3/Category 4 hurricane made landfall in Florida between Delray Beach and Palm Beach with winds of 130 mph and a barometric pressure of 954.0 millibars (28.17 in). As it moved inland, its center passed over the northern part of Lake Okeechobee, but the levees in that area held and no major flooding occurred. Damages were estimated at $45 million. Tides of 11.3 ft at Fort Pierce, 8.5 ft at Stuart, and 6.9 ft at Lake Worth were reported. Stuart sustained severe damages from this storm. Statewide, over 500 people lost their homes as a result of this storm.

Hurricane Donna of September 1960. Hurricane Donna was the 6th most intense U.S. Hurricane at landfall. This storm crossed the Florida Keys into the Gulf of Mexico then turned back toward the northeast and struck the Florida mainland just south of Naples. It then turned north moved across Ft. Myers, where it turned again to the northeast, moved across the state, and exited Florida at just north of Daytona Beach. Rainfall ranged from five to ten inches in an 80 to 100-mile wide belt following this storm's track. Lakes and streams overflowed their banks and forced the evacuation of many homes throughout central Florida. The high water closed many roads and inundated considerable agricultural land. At least 12 people were killed statewide and more than 1,794 were injured.

Hurricane Cleo of August 1964. This small but destructive storm moved northward into Biscayne Bay on 27 August 1964. Palm Beach County received three to five inches of rain associated with this storm, mostly in the eastern portion of the county. Most sustained damage was associated with wind rather than flooding.

Hurricane Agnes of June 1972. Hurricane Agnes moved through the Gulf of Mexico off Florida's west coast. While it never struck central Florida mainland, it spawned the worst severe weather outbreak in Florida history. The outer rain bands covered virtually the entire peninsula and spawned numerous tornadoes. There were six people killed and 40 injured in Okeechobee, one killed and seven injured in La Belle, 40 injured at Big Coppit Key, two injured at Bassinger, three injured in Haines City, four at Crystal Springs, 11 in Malabar, and 12 in Cape Canaveral. Most of those injured lived in manufactured housing. Damage estimates totaled $5 million to public property and $36 million to private property.

Hurricane David of September 1979. Hurricane David moved over the Dominican Republic with winds of 165 mph, but weakened drastically before reaching Florida's east coast. David raked the eastern coastline of Florida from Palm Beach County northward. Officially classed as a minimal hurricane, its strongest winds were offshore when it officially made landfall approximately 20 miles south of Melbourne. Tides were three to five feet above normal along the eye track and one to two feet above normal elsewhere along the Florida's east coast. Light to moderate erosion was reported along the Palm Beach County coastline. Storm rainfall was quite variable from location to location. Totals generally ranged from six to nine inches, but some stations reported as much as 11 inches during the storm's passage.

Tropical Storm Isidore of September 1984. Tropical Storm Isidore made landfall near West Palm Beach on 27 September 1984 and moved inland toward Orlando. Highest winds were 73 mph and rainfall was reported to be five to seven inches over a 24-hour period. There was some flooding, but this occurred mostly in northern Florida.

Tropical Storm Bob of June 1985. On 23 June 1985, Tropical Storm Bob moved across south Florida in a northeasterly direction from Fort Myers to just north of Palm Beach. Rainfall from this event did minor damage, mostly along Florida's west coast. Palm Beach County suffered moderate agricultural losses.

Tropical Storm Gordon of October 1994. Following a similar track to hurricane Donna of 1960, tropical storm Gordon crossed the Florida Keys into the Gulf of Mexico then turned back to the northeast and struck the mainland Florida Peninsula near Fort Myers on 13 October. It moved across the state and exited Florida into the Atlantic just north of Vero Beach on 16 October. Although the maximum sustained winds reported from Gordon were only 53 mph, the storm caused eight deaths and 43 injuries.

Palm Beach County had experienced a period of extensive growth during the 1970s and 1980s. Most of this growth took place in the form of residential and commercial land development in the eastern portion of the county close to the Intracostal Waterway and the beaches. The rain event associated with Tropical Storm Gordon in October of 1994 was the most significant rain event to occur after this period of development. Essentially, the county received 17+ inches of rain over a 3-day period. Rainfall was not evenly disbursed over the whole county.

Statewide damages associated with Gordon totaled over $400 million. Agricultural interests sustained $275 million in damages primarily from the widespread flooding. Vegetable and citrus crops were hit particularly hard. Exacerbating the flooding associated with Tropical Storm Gordon was the fact that prior to October, 1994 had been a very wet year for Palm Beach County. Rainfall recorded through September of that year had reached 74 inches before the Gordon event occurred. Altogether Palm Beach County received approximately 100 inches of rain in 1994, making that year the wettest year since 1913.

Hurricane Erin of August 1995. Hurricane Erin made landfall near Sebastian Inlet on 2 August 1995. Brevard County bore the brunt of this storm with sustained winds of approximately 100 mph. While Palm Beach County was spared most of the damages associated with Erin's wind field, heavy rains of up to 8 inches in 3 hours were associated with the backside of this storm and flooding occurred in low-lying areas along the county's northern edge.

Tropical Storm Mitch of October 1998. Hurricane Mitch was one of the deadliest storms in Atlantic history. By the time it reached Florida on 4 and 5 November 1998, it had been downgraded to a tropical storm. Palm Beach County received minimal rains from this storm which passed to the north of the county. Extensive agricultural damage was reported throughout South Florida.

Hurricane Irene of October 1999. Hurricane Irene weakened to Tropical Storm force winds by the time it tracked north through the Everglades, but it menaced South Florida and Palm Beach County with incessant rains and its sluggish pace. In the end it dropped 10-20 inches of rain throughout the County, causing extensive flooding in some areas. By Friday evening (October 15) 125,000 homes in Palm Beach County were without power.

Hurricane Frances of September 4, 2004. Hurricane Frances formed from a tropical depression in the deep tropical Atlantic on August 25 about 1400 miles east of the Lesser Antilles and reached hurricane strength on August 26. Frances became a Category 4 Hurricane on August 28 while about 700 miles east of the Lesser Antilles. Frances then moved generally west northwest and weakened to a Category 2 hurricane while crossing the northwest Bahamas. After stalling for about 12 hours on September 4 in the Florida Straits between Grand Bahama Island and the southeast Florida coast, the center of the nearly 70-mile diameter eye crossed the Florida coast near Sewalls Point, at 1 A.M. EDT, September 5, 2004 with the southern eyewall affecting the extreme northeast portion of Palm Beach County. Frances moved farther inland just north of Lake Okeechobee and weakened to a tropical storm before crossing the entire Florida Peninsula and exiting into the Gulf of Mexico just north of Tampa late on September 5. It made a second landfall as a tropical storm in the eastern Florida Panhandle.

Sustained tropical storm-force winds likely occurred in all six south Florida counties. Although no sustained hurricane-force winds were officially observed in any of the six south Florida counties, an NWS instrument on the eastern shore of Lake Okeechobee at Port Mayaca, just across the Palm Beach County border, measured a sustained wind of 85 mph. At West Palm

Beach International Airport the highest sustained wind was 64 mph with a peak gust of 82 mph and the lowest observed barometric pressure was 972 mb. A South Florida Water Management District instrument measured a peak wind gust of 92 mph over the eastern portion of Lake Okeechobee. The estimated peak wind gust in the Palm Beach metro area was 91 mph at Jupiter Inlet with a peak wind gust of 87 mph measured by a C-MAN station at Lake Worth Pier. In Glades County near the western shore of Lake Okeechobee the highest measured sustained wind was 60 mph with a peak gust of 90 mph. In Clewiston, a sustained wind of 60 mph with a gust of 80 mph was estimated.

A maximum storm-total rainfall amount of 13.56 inches was measured at Palm Beach International Airport with 10.36 inches of that occurring in a 24-hour period. Unofficial storm-total rainfalls included 9.56 inches at Boynton Beach, eight inches at Deerfield Beach and 7.18 inches at Hillsboro Canal. Widespread storm-total amounts of three to five inches occurred in southeast and interior south Florida with southwest Florida averaging one to three inches. Rainfall flooding was mostly minor except for a few locations in Palm Beach County which had up to three feet of standing water. A section of I-95 in Palm Beach County was closed due to a large sinkhole. The maximum storm surge was estimated to have ranged from two to four feet along the northeast Palm Beach Coast to one to two feet along the northeast Broward Coast. Within the confines of the Herbert Hoover Dike, water levels on Lake Okeechobee fluctuated up to five feet above and below normal. Coastal beach erosion was moderate in Palm Beach and portions of Broward counties.

There were no confirmed tornadoes. There were no known direct deaths, but at least nine people died in the aftermath. Six of these deaths occurred in Palm Beach County, mainly as the result of vehicle-related accidents or from drownings. An unknown number of injuries occurred. Property damage at the coast occurred mainly to marinas, piers, seawalls, bridges and docks, as well as to boats. Inland structure damage included 15,000 houses and 2,400 businesses in Palm Beach County. Wind damage to house roofs, mobile homes, trees, power lines, signs, screened enclosures and outbuildings occurred over much of southeast Florida including areas near Lake Okeechobee, but was greatest in Palm Beach County. A preliminary damage estimate for Frances in south Florida was $620 million, including $500 million in Palm Beach, $80 million in Broward, and $34 million in Miami-Dade. Crop damage in Palm Beach County was estimated at an additional $70 million to sugar cane and vegetables and additional heavy losses occurred to nurseries. Florida Power and Light reported power outages for 659,000 customers in Palm Beach, 590,000 in Broward, 423,000 in Miami-Dade, 39,200 in Collier, 2,500 in Hendry and 1,700 in Collier. An estimated 17,000 persons sought refuge in public shelters in Palm Beach County and nearly 7,000 in Broward County.

Hurricane Jeanne of September 25, 2004. Just three weeks after Hurricane Frances, Hurricane Jeanne struck the same area of southeast Florida. Hurricane Jeanne formed from a tropical depression just east of the Leeward Islands on September 13. She moved across Puerto Rico and Hispaniola then turned north into the Atlantic and became a hurricane on September 20. Jeanne made a clockwise loop for three days in the Atlantic north of Hispaniola before moving west northwest. It strengthened to a Category 3 Hurricane while over the northwest Bahamas and then made landfall around 11 P.M., September 25 near the south end of Hutchinson Island, nearly coincident with the landfall point of Hurricane Frances just three weeks before. The 40-mile diameter eye was not quite as large as Frances, but the southern eyewall again affected northeast Palm Beach County. After landfall, Jeanne initially moved along a track similar to Frances, just north of Lake Okeechobee as it weakened to a tropical storm then turned to the northwest and moved over the northwest Florida Peninsula.

Although slightly smaller and stronger then Hurricane Frances, winds and pressures over southeast Florida were remarkably similar to Frances. Unfortunately, the ASOS at Palm Beach International Airport stopped sending data during the height of the hurricane. Sustained tropical storm-force winds likely occurred over most of Palm Beach and northeast Glades counties and portions of Broward, Hendry and Collier counties. Although no sustained hurricane-force winds were officially observed in any of the six south Florida counties, portions of northern Palm Beach County mostly likely experienced them. A South Florida Water Management District (SFWMD) instrument in the Martin County portion of Lake Okeechobee measured a 15-minute sustained wind of 79 mph with a peak gust of 105 mph. In metropolitan Palm Beach the highest official sustained wind speed was 60 mph with a peak gust of 94 mph from the C-MAN station at Lake Worth Pier. An unofficial peak wind gust of 125 mph was measured in West Palm Beach at the Solid Waste Treatment Plant. Near Clewiston the highest measured sustained wind was 31 mph with a peak wind gust of 72 mph from a SFWMD instrument. The lowest barometric pressure of 960.4 mb was measured at a SFWMD site in the Martin County portion of Lake Okeechobee.

A SFWMD gage measured a maximum storm-total rainfall amount of 10.22 inches over the eastern portion of Lake Okeechobee. A SFWMD gage about four miles west of West Palm Beach International Airport measured 9.10 inches with 8.79 inches of that occurring in a 24-hour period. At Moore Haven, 5.99 inches of rain was measured. Mostly minor rainfall flooding was observed except in Palm Beach Gardens, Jupiter and in the farmlands of western Palm Beach County where it was more severe.

The estimated maximum storm surge ranged from two to four feet along the northeast Palm Beach Coast to one to two feet along the northeast Broward Coast. Within the confines of the Herbert Hoover Dike, water levels on Lake Okeechobee fluctuated up to seven feet above and below normal causing severe flooding of some marinas. Beach erosion was moderate in Palm Beach.

There were no confirmed tornadoes. There were no known direct deaths but four persons died in the aftermath. An unknown number of injuries occurred. Storm surge and winds at the coast caused damage to condos, marinas, piers, seawalls, bridges and docks, as well as to boats and a few coastal roadways. Inland wind damage to building roofs, mobile homes, trees, power lines, signs, and outbuildings occurred mainly over Palm Beach County and portions of eastern Glades and Hendry counties. Preliminary damage estimates for Jeanne in southeast Florida were $330 million, including $260 million in Palm Beach County, $50 million in Broward and $10 million in Miami-Dade. Agricultural Damage in Palm Beach County was estimated at $30 million. Florida Power and Light reported outages occurred to 591,300 customers in Palm Beach County, 165,900 in Broward, 25,100 in Miami-Dade, 5,200 in Collier, 3,000 in Hendry and 1,500 in Glades. An estimated 12,534 persons sought refuge in public shelters in Palm Beach County.

Hurricane Wilma October 24, 2005. Wilma was a classic October hurricane which struck South Florida as a Category 3 hurricane on October 24th, 2005. Wilma developed from a tropical depression near Jamaica, a typical source region for October tropical cyclones, on the afternoon of October 15, 2005. It became the 21st named storm of the season during the morning hours of October 17, 2005, which tied the record for the most named storms in one season originally set back in 1933. Wilma underwent a rapid intensification cycle which began on October 18th and ended in the early morning hours of October 19th, with a central pressure decrease of 88 mb in only 12 hours. The central pressure reached 882 mb., making Wilma the most intense hurricane ever in the Atlantic Basin. lower than Hurricane Gilbert in September 1988. Wilma went on to make landfall on Cozumel Island just off the Yucatan Peninsula as a strong category 4

hurricane on Friday, October 21st, then drifted erratically over the Yucatan Peninsula through Saturday evening October 22nd. Wilma began to move off the northeast coast of the Yucatan Peninsula on the night of the 22nd, then gradually accelerated northeast over the southern Gulf of Mexico toward South Florida as a strong mid and upper-level trough over the central United States moved south and forced a southwesterly steering flow.

The hurricane made landfall as a Category 3 storm shortly before 7 AM Monday, October 24th on the southwest Florida coast between Everglades City and Cape Romano with maximum sustained winds of 125 mph and an estimated minimum central pressure of 950 mb. Wilma exhibited a very large 55 to 65 mile-wide eye while crossing the state, and the eye covered large portions of South Florida, including the eastern two-thirds of Collier County, extreme northwestern Miami-Dade County, the southern and eastern third of Hendry County, most of Broward County, and all of Palm Beach County. The eye also clipped the southeastern shore of Lake Okeechobee. The eye wall affected virtually all of South Florida. Around 10:30 AM, a South Florida Water Management District (SFWMD) meteorological station located at the south end of Lake Okeechobee reported sustained winds of 103 mph. The highest recorded gusts were in the 100-120 mph range. The winds on the back (south/west) side of the eye wall were as strong, if not stronger, than those on the front (north/east) side. This goes against the common, but sometimes erroneous, belief that the strongest winds in a hurricane are always in the right-front quadrant of the storm. This occurred over much of South Florida, except for central and southern Miami-Dade County which barely missed the southwestern portion of the eye wall, and likely contributed to the heavier damage across Broward and Palm Beach counties compared to slightly lesser damage across much of Miami-Dade and Collier counties.

Wilma moved rapidly northeast across the state, with an average forward speed of 25 mph. Wilma exited the east coast over northeastern Palm Beach County near Palm Beach Gardens around 11 AM Monday October 24th as a Category 2 hurricane with maximum sustained winds of around 105 mph. It traversed the southern peninsula in about four hours. Rainfall amounts across South Florida generally ranged from two to four inches across southern sections of the peninsula to four to six inches across western Collier county and around Lake Okeechobee, with a maximum amount of 7.31 inches in Clewiston. Downtown Miami, and Northeast Miami.

In Collier, Miami-Dade, Broward, and Palm Beach Counties, the winds killed a total of five people. Total damage estimates from all the effects ranged from $9 to $12 billion. Extensive damage to crops was reported, with an estimated $222 million in crop damage for Miami-Dade County alone. Damage was widespread, with large trees and power lines down virtually everywhere, causing over 3 million customers to lose power. Structural damage was heaviest in Broward and Palm Beach counties where roof damage and downed or split power poles were noted in some areas. High-rise buildings suffered considerable damage, mainly in the form of broken windows. This was observed mainly along the southeast metro areas. An F1 tornado caused snapped power poles, uprooted large trees, and significant damage to mobile homes. Small swaths of greater damage elsewhere in South Florida have not been attributed to tornadoes, but were instead likely caused by "mini-swirls", small vortices within the eye wall.

Tropical Storm Noel of October 30-31, 2007. Tropical Storm Noel moved north from eastern Cuba across the western Bahamas Islands from October 30 through October 31. The interaction of Noel with a strong high pressure area located over the mid-Atlantic states produced strong winds over southeast Florida and the adjacent waters well before Noel made its closest passage to the area early on November 1. Damage was minor and mainly confined to a few downed power lines. Around 5,000 customers lost power in the three-county area of Palm Beach, Broward and Miami-Dade. Rainfall amounts were light, ranging from a half-inch (0.5) to

nearly two inches. A strong pressure gradient between high pressure over the Mid-Atlantic states and Tropical Storm Noel over Hispaniola and eastern Cuba caused a prolonged period of strong east winds over Southeast Florida and the adjacent waters. As Noel moved north across the western Bahamas, the strong winds continued across southeast Florida. The event caused severe beach erosion, coastal flooding, and minor wind damage. The event lasted into the first few days of November.

Tropical Storm Fay of August 15-23, 2008. The center of Tropical Storm Fay moved across Key West early in the evening of August 18th and into the mainland of South Florida at Cape Romano shortly before 5 AM on the 19th. Minimum central pressure was 989 MB at landfall, but continued to decrease after landfall to 986 MB at Moore Haven on the southwest shore of Lake Okeechobee.

Maximum sustained winds were estimated to be around 60 MPH at landfall, however as the storm tracked across the western Everglades and Southwest Florida the radar presentation continued to organize and winds increased to around 65 MPH around Moore Haven. A maximum wind gust of 79 MPH was recorded on a South Florida Water Management gauge on Lake Okeechobee as the storm passed. Wind gusts of tropical storm force were felt area-wide, with sustained tropical storm force winds experienced over portions of mainland Monroe, Collier, Hendry and Glades counties as well as the immediate coastal sections of Miami-Dade, Broward and Palm Beach Counties. Wind damage was most significant in the areas affected by tropical storm force sustained winds, primarily around Lake Okeechobee and interior sections of southwest Florida, with only minor wind damage elsewhere.

The storm caused over $10 million in beach erosion along Palm Beach County's coastline. A maximum rainfall total of 16.17 inches was reported with this event at Moore Haven in Glades County. Flooding from these rains produced total damage estimates of $380,000, primarily in Glades and Hendry counties. Rainfall elsewhere ranged from three to six inches in southeast Florida, and six to eight inches in southwest Florida, with isolated amounts up to ten inches in coastal Palm Beach County. All the associated effects of Tropical Storm Fay in South Florida resulted in one fatality, four injured, and $3.949 million in property damage. Two tornadoes produced $1.25 million in damage, but caused no injuries or fatalities. The one fatality and three of the injuries were indirectly caused by Fay with a traffic accident in Palm Beach County. The direct injury occurred when a kite surfer on Fort Lauderdale Beach lost control during a squall and was slammed into a building along A1A. Fay caused tropical storm force winds, significant rainfall flooding in some areas and two confirmed tornadoes.

3.1.1.3 Tornado

Florida ranks third in the United States in the number of tornado strikes, and the first in the number of tornadoes per square mile. The odds of a tornado striking any specific point in southeastern Florida are 0.04, or once per 250 years.

Tornadoes are classified using the Fujita-Pearson scale as follows:

F = Intensity	P = Path Length	W = Mean Width
F0 = Light Damage	P0 = less than 1 mile	W0 = less than 0.01 mile
F1 = Moderate Damage	P1 = 1.0 to 3.1 miles	W1 = 0.01 to 0.03 mile

F2 = Considerable Damage	P2 = 3.2 to 9.9 miles	W2 = 0.04 to 0.09 mile
F3 = Severe Damage	P3 = 10.0 to 31.0 miles	W3 = 0.10 to 0.31 mile
F4 = Devastating Damage	P4 = 32.0 to 99.0 miles	W4 = 0.32 to 0.99 mile
F5 = Catastrophic Damage	P5 = 100 miles or greater	W5 = 1.00 miles or wider

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud. It is generated by a thunderstorm (or sometimes as a result of a hurricane) and produced when cool air overrides a layer of warm air, forcing the warm air to rise rapidly. The damage from a tornado is a result of the high wind velocity and wind-blown debris. The most common type of tornado, the relatively weak and short-lived type, occurs in the warm season with June being the peak month. The strongest, most deadly tornadoes occur in the cool season, from December through April. Occasional wind-storms accompanied by tornadoes such as the winter storm of 1993 are also widespread and destructive. Of the 134 tornadoes seen in Palm Beach County between 1950 and 2002, 87 were classified as F0 tornadoes (59%), 38 (31%) were classified F1, eight (9%) were classified as F2, and one (1%) was classified as an F3 tornado. Between 1950 and 2008 there have been 277 reported tornadoes, 102 people injured and one death in Palm Beach County as a result of a tornado. The damage is estimated at over $150 million dollars since 1950.

When a tornado threatens, only a short amount of time is available for life-or-death decisions. The National Weather Service (NWS) issues two types of alerts:

- A Tornado Watch means that conditions are favorable for tornadoes to develop.
- A Tornado Warning means that a tornado has actually been sighted.

August 7, 2003 On August 7, 2003, there was a Tornado Watch issued by the NWS. Two tornadoes touched down later that evening in the northern part of Palm Beach County. Jupiter suffered damage to a shopping plaza. No injuries were reported. A second tornado touched down in unincorporated Palm Beach County in a mobile home park causing major damage in some areas. The tornado moved in the direction of east southeast toward Interstate 95. The tornado caused considerable damage to an industrial park located in unincorporated Palm Beach County/Riviera Beach. The tornado continued in the same direction damaging several neighborhoods in Riviera Beach. It continued through additional neighborhoods in Riviera Beach just north of Blue Heron Boulevard. The damage path was narrower until it lifted or dissipated near the intersection of Blue Heron Boulevard and Old Dixie Highway.

From all of the evidence considered, including some damage that was very close to F2 damage, WFO Miami classified the unincorporated Palm Beach County-Riviera Beach tornado as F1 on the Fujita scale, meaning that winds were approximately 73 to 112 mph. The worst damage was apparently caused by winds near the upper end of that range. Miami National Weather Service Forecast Office (WFO) meteorologists determined that the main path of the tornado was approximately 1/6 mile (300 yards) wide at its widest point and about four miles long. There were no deaths, but 28 individuals suffered minor injuries.

There were 33 dwellings destroyed and a total of 236 suffered damage. The damage has been estimated to be $70 to $80 million dollars.

August 2008 Wellington Tornado At about 1:30 AM on August 19, 2008 a tornado associated with a spiral band of strong thunderstorms rotating around the circulation of Tropical Storm Fay moved through the Village of Wellington. The tornado began near Polo Mark Middle School near the intersection of Lake Worth Road and Isles View Drive and ended just southwest of Wellington High School. The tornado had an approximate damage path of 2.75 miles from the southeast to the northwest and was around 100 yards wide at its widest point, but averaged 70 to 80 yards in width.

The tornado moved through a number of equine farms and polo grounds as well as two subdivisions in Wellington. The most significant damage was to Palm Beach Equine Clinic, where stables were de-roofed, power poles snapped, and many trees fell in crisscrossing patterns. The Equine Veterinary lost more than 95 percent of its roof tiles; a heavy trailer was tossed about 40 yards from its previous location northwest of the International Polo Club; and an apartment home near Folkstone Circle lost about 70 percent of its roof tiles. There were no deaths or injuries to people or animals.

3.1.1.4 Severe Thunderstorm/Lightning

A severe thunderstorm is defined as a thunderstorm containing one or more of the following phenomena: hail 3/4" or greater, winds gusting in excess of 57.5 mph, and/or a tornado. Severe weather can include lightning, tornadoes, damaging straight-line winds, and large hail. Most individual thunderstorms only last several minutes, however some can last several hours.

Long-lived thunderstorms are called supercell thunderstorms. A supercell is a thunderstorm that has a persistent rotating updraft. This rotation maintains the energy release of the thunderstorm over a much longer time than typical, pulse-type thunderstorms which occur in the summer months. Supercell thunderstorms are responsible for producing the majority of severe weather, such as large hail and tornadoes (National Oceanic and Atmospheric Administration). Downbursts are also occasionally associated with severe thunderstorms. A downburst is a strong downdraft resulting in an outward burst of damaging winds on or near the ground. Downburst winds can produce damage similar to a strong tornado. Although usually associated with thunderstorms, downbursts can even occur with showers too weak to produce thunder (National Oceanic and Atmospheric Administration). Strong squall lines can also produce widespread severe weather, primarily very strong winds and/or microbursts.

When a severe thunderstorm approaches, the National Weather Service will issue alerts. Two possible alerts are:

- Severe Thunderstorm Watch - Conditions are favorable for the development of severe thunderstorms.
- Severe Thunderstorm Warning - Severe weather is imminent or occurring in the area.

Thunderstorms are common in Palm Beach County, and area residents are quite familiar with them and the severe weather they can bring. In 1997, thunderstorms produced 103 tornadoes and other damaging winds and hail. These winds injured 121 people and caused over $38 million in damage throughout the state.

Perhaps the most dangerous and costly effect of thunderstorms is lightning. As a thunderstorm grows, electrical charges build up within the cloud. Oppositely charged particles gather at the ground below. The attraction between positive and negative charges quickly grows strong

enough to overcome the air's resistance to electrical flow. Racing toward each other, they connect and complete the electrical circuit. Charges from the ground then surge upward at nearly one-third the speed of light and produce a bright flash of lightning (Cappella, 1997).

On average, more people are killed by lightning than any other weather event. Florida leads in the nation in lightning related deaths and injuries (National Lightning Safety Institute). Florida also has the most strikes, about 12 strikes per square kilometer per year in some places (National Lightning Safety Institute). Nationwide, lightning related economic losses to over $5 billion dollars per year, and the airline industry alone loses approximately $2 billion a year in operating costs and passenger delays from lightning. From July of 1959 to August of 2003 there have been 25 deaths and 93 injuries as a result from lightning strikes. The peak months for lightning strikes are June, July, and August, but no month is safe from lightning danger.

3.1.1.5 Drought

Drought is a normal, recurrent feature of climate, although many perceive it as a rare and random event. In fact, each year some part of the U.S. has severe or extreme drought. Although it has many definitions, drought originates from a deficiency of precipitation over an extended period of time, usually a season or more (National Drought Mitigation Center, 1998) or a lack of water levels on the ground. It produces a complex web of impacts that spans many sectors of the economy and reaches well beyond the area producing physical drought. This complexity exists because water is essential to our ability to produce goods and provide services (National Drought Mitigation Center, 1998).

A few examples of direct impacts of drought are: reduced crop, rangeland, and forest productivity; increased fire hazard; reduced water levels; increased livestock and wildlife mortality rates; and damage to wildlife and fish habitats. Social impacts include public safety; health issues; conflicts between water users; reduced quality of life; and inequities in the distribution of impacts and disaster relief. Income loss is another indicator used in assessing the impacts of drought; reduced income for farmers has a ripple effect throughout the region's economy (National Drought Mitigation Center, 1998).

The impact is so diffuse that it is difficult to come up with financial estimates of damages. However, the Federal Emergency Management Agency (FEMA) estimates $6-8 billion in losses as the annual average. The worst drought in recent history occurred in 1987-1989, and the National Climatic Data Center (NCDC) reports the estimated cost as $40 billion (National Drought Mitigation Center, 1998).

In Palm Beach County, the primary sources of water are Lake Okeechobee, watershed areas, and the county's wellfields. Normally, excess water from an interconnected series of lakes, rivers, canals, and marshes flows into Lake Okeechobee via the Kissimmee River. When this cycle is disrupted by periods of drought, one of the potentially most damaging effects is substantial crop loss in the western agriculture areas of the county. In addition to obvious losses in yields in both crop and livestock production, drought in Palm Beach County is associated with increases in insect infestations, plant disease, and wind erosion. The incidence of wild fires increases substantially during extended droughts, which in turn places both human and wildlife populations at higher levels of risk.

The South Florida Water Management District and County staff manage the county's water resources. A county-wide, uniform, forceful, contingency plan is in place to effectively restrict

the use of water that complements the District's water management efforts during periods of critical water shortage.

The driest year on record for Florida was 2000. The worst drought on record for Palm Beach County was from 2000 to 2001. From November 2000 until February 2001, Palm Beach County recorded its four driest months on record. An illustration of this dry period occurred after Irene in 1999, when Lake Okeechobee was recorded to be at 18 feet. By May of 2001 it had dropped to nine feet. Lake Okeechobee's average is about 13 feet.

Palm Beach County averages between 50-60 inches of rain a year. In the year 2000, there was less than 40 inches of rain. However, records illustrate rainfall often varies 20 inches above or below the annual average. This leads to the potential drought conditions.

Significant droughts since 1970 to impact Palm Beach County include:

1970 -1971 Drought. Lake Okeechobee reached a minimum stage of 10.29 feet NGVD on June 7, 1971. A rainfall deficit of 43 percent was reported as average for Lake Okeechobee and the Northern, Central, and Southern Everglades for the eight-month period from October 1970 to May 1971.

1973 – 1974 Drought. The 1973–1974 drought was comparable to the 1971–1972 drought. The rainfall deficit during this period was 47 percent. The minimum lake stage of 10.98 feet NGVD was reached on May 31, 1974.

1980 – 1982 Drought. The 1980–1982 drought was one of the most severe droughts ever in South Florida. A more than 20-inch rainfall deficit over two years resulted in the decline of the Lake Okeechobee stage from 17.46 feet NGVD on January 1, 1980 to 9.79 feet NGVD on July 31, 1981. The 7.7-foot drop in water level was attributed to a decrease in rainfall and increases in evaporation and water use. The drought for the Lower East Coast and Water Conservation Areas was relieved in 1981 by Tropical Storm Dennis.

1985 Drought. The 1984 wet season and the 1984–1985 dry season had rainfall deficiencies that resulted in the 1985 drought. The upper Kissimmee, lower Kissimmee, and Lake Okeechobee rain areas had an average deficit of 14 inches. The Lake Okeechobee water level declined from 15.14 feet NGVD to 11.82 feet NGVD between January 1, 1985 and June 12, 1985. The South Florida Water Management District had to initiate back pumping to increase water supply. A water shortage plan was also implemented.

1988 – 1989 Drought. South Florida experienced a severe drought from September 1988 to August 1989, during which there was a 21-inch rainfall deficit in the Everglades Agricultural Area and the Lower East Coast. The Lake Okeechobee water level declined from 15.95 feet NGVD on September 1, 1988 to 11.06 feet NGVD on August 8, 1989. During the same period a record storage depletion was reported for Lake Okeechobee and the Water Conservation Area .

1990 Drought. The 1990 drought was a continuation of the 1988–1989 drought. From June 1989 through May 1990, a nine inch rainfall deficit occurred District-wide and was most severe in Everglades National Park. Lake Okeechobee supply-side management and water restrictions were implemented to conserve lake water. The Lake Okeechobee water level declined from 12.25 feet NGVD on January 1, 1990 to 10.47 feet NGVD on June 21, 1990.

2000-2001 Drought. A new low water level record of 8.97 feet NGVD was set for Lake

Okeechobee on May 24, 2001 during the 2000–2001 drought in South Florida.

2007 Drought. A severe drought affected the region from late 2006 through 2007. This drought followed back-to-back years of unprecedented hurricane activity and higher-than-normal rainfall.

On July 2, 2007 water levels in Lake Okeechobee reached an all-time record low of 8.82 feet, eclipsing the mark of 8.97 feet set during the 2001 drought. Rainfall directly over the lake was low enough to qualify the 2007 drought as a 1-in-100-year event. Just north of the lake, along the tributary Kissimmee River and Upper Chain of Lakes, low rainfall produced a 1-in-50-year drought. Only 40 inches of rain fell on the region in an 18 month period, about one-half the average. More than 200 days passed without water flowing from the Kissimmee River into Lake Okeechobee.

A combination of voluntary and mandatory water use restrictions were enacted by the SFWMD in early 2007. Drought conditions diminished somewhat on the coasts during the wet season, however, water supplies in the center of the region (Kissimmee Valley and Lake Okeechobee) continued to decline. Widespread drought conditions continued into late 2007, particularly in the Lake Okeechobee watershed, evidenced by record-low water levels and dry water control structures in the vicinity of the lake.

A combination of a wetter than expected February, March and early April 2008 and a wetter than normal summer finally interrupted the extended drought. Punctuating this increased rainfall was the passage of Tropical Storm Fay on August 18 and 19. Fay was a very wet tropical storm, which brought a general average of 7 to 10 inches of rain into southern Palm Beach County, including Lake Okeechobee and surrounding areas. Isolated amounts near the southwest shore of Lake Okeechobee were in the 12 to 15 inch range, with Moore Haven recording a two-day total of 16.17 inches. Despite this relief, water use restrictions have continued into 2009 and likely beyond in order to balance longer-term regional water availability and supply needs. As of this writing, the region was still experiencing moderate drought conditions.

The 2007 Drought was different. Typically, when one part of the regional system is experiencing drought conditions, backup water supplies are available through operation of the Central and Southern Florida Flood Control Project. Before the 2007 drought, the SFWMD had never experienced a situation where all three major water storage areas of the system – the Upper Kissimmee Chain of Lakes, Lake Okeechobee, and the Water Conservation Areas – simultaneously had substantially below normal water levels approaching record lows. Lakes in the Upper Kissimmee area were below their regulation schedule and not available as a source of water to Lake Okeechobee. Lake Okeechobee was anticipated to reach a new record and not be available to send backup water supplies to the Lower East Coast. At the same time the Water Conservation Areas were nearing their minimum regulation schedule, below which no water could be withdrawn. Without a schedule deviation authorized by the U.S. Army Corps of Engineers, the District is not able to withdraw water from these areas to recharge the coastal canals.

The period from November 2005 to March 2007 ranked as the third driest period in recorded history. The Governing Board of the District imposed mandatory water shortage restrictions in areas around Lake Okeechobee in November 2006 and in Southeast Florida in March 2007. Nevertheless, drought conditions intensified substantially. Compounding the lack of rainfall there were consistently windy conditions, low humidity, and lack of cloud cover contributing to above average evapotranspiration rates.

3.1.1.6 Extreme Temperatures

Freezing Temperatures

According to the Department of Agriculture and Consumer Services, a moderate freeze may be expected every one to two years. Severe freezes may be expected on an average of once every 15 to 20 years. Freezes pose a major hazard to the agriculture industry in Palm Beach County on a recurring basis, and are a significant threat to the economic vitality of the state's vital agriculture industry. Palm Beach County has experienced seven significant freezes between 1970 and the present.

Florida has experienced a number of severe or disastrous freezes, when the majority of the winter crops are lost. The lowest temperature ever recorded in the state is 12°F (National Climatic Data Center). Since December 1889, there have been at least 22 recorded severe freezes; the most recent being in 1996, when a Presidential Disaster Declaration was issued for crop losses exceeding $90 billion. During this event, there was an extensive loss of citrus trees and the majority were not replanted.

On rare occasions, the winter of 2000-2001 for example, there were over 20 nights between November and March where temperatures or wind chill readings fell below 40 degrees Fahrenheit.

Freezing conditions primarily affect agriculture and homeless indigents in Palm Beach County. When conditions are predicted to fall below 40 degrees Fahrenheit, shelters are opened.

Recent significant freezes include:

The 1977 Freeze. Climaxing one of the coldest winters ever recorded in the eastern United States, a severe cold outbreak of arctic air swept into Florida January 18 through 21, 1977. Snow was reported as far south as Homestead and a severe freeze affected all of the State's citrus and vegetable crops.

In South Florida agricultural areas, the freeze was one of the most severe of this century. Temperatures were below freezing for l0 to l4 hours, and 28 degrees or colder for four to eight hours. An unusually heavy frost accompanied these freezing temperatures and extended to the coast. West Palm Beach recorded an all-time low of 27 degrees. Some farmers in the area reported temperatures near 20 degrees.

A U. S. Department of Agriculture report indicated the following crop loss statewide: Citrus 35%, vegetables 95-l00%, commercial flowers 50-75%, permanent pasture land 50%, sugar cane 40%. It is estimated the 1977 freeze cost the Florida economy $2 billion (1977 dollars).

The 2009 Freeze. At this writing, agricultural damages from a January 2009 freeze are being assessed. Seventy million citrus trees and tens of thousands of acres of fresh fruits and vegetables were in regions where temperatures remained below 30 degrees for several hours for two consecutive days. In the Glades area freezing temperatures lasted as long as 12 hours. Early estimates were that the bean crop was destroyed and as much as 85% of the corn crop could be lost. Sugar cane also took a hit, but damage will not be known until harvest time. This event promises to be the most destructive since the 1989 freeze. Tens of millions of dollars, if not hundreds of millions of dollars, in losses are possible. A second freeze occurred two weeks later causing some additional crop damage, but was not as severe.

Extreme Heat

Temperatures that remain ten degrees or more above the average high temperature for a region and last for several weeks are defined as extreme heat (Federal Emergency Management Agency, 1996). Humid conditions, which add to the discomfort of high temperatures, occur when an area of high atmospheric pressure traps hazy, damp air near the ground. The highest temperature ever recorded in the state was on June 29, 1931 at 103 degrees in Monticello at an elevation of 207 ft. (National Climatic Data Center, 1996). In a normal year, approximately 175 Americans die from extreme heat. However, in 1995 the national death toll was 1,021 (National Weather Service, 1997).

Human bodies dissipate heat in one of three ways: by varying the rate and depth of blood circulation; by losing water through the skin and sweat glands; and by panting. As the blood is heated to above 98.6 degrees, the heart begins to pump more blood, blood vessels dilate to accommodate the increased flow, and the bundles of tiny capillaries penetrating through the upper layers of skin are put into operation. The body's blood is circulated closer to the surface, and excess heat is released into the cooler atmosphere. Water diffuses through the skin as perspiration. The skin handles about 90% of the body's heat dissipating function.

Heat disorders generally have to do with a reduction or collapse of the body's ability to cool itself by circulatory changes and sweating, or a chemical (salt) imbalance caused by too much sweating. When the body cannot cool itself, or when it cannot compensate for fluids and salt lost through perspiration, the temperature of the body's inner core begins to rise and heat-related illness may develop. Studies indicate that, other factors being equal, the severity of heat disorders tend to increase with age. Heat cramps in a 17-year-old may be heat exhaustion in someone 40, and heat stroke in a person over 60.

When the temperature gets extremely high, the NWS has increased its efforts to alert the general public as well as the appropriate authorities by issuing Special Weather Statements. Residents should heed these warnings to prevent heat related medical complications. As a result of the latest research findings, the NWS has devised the "Heat Index" (HI). The HI, given in degrees Fahrenheit, is an accurate measure of how hot it feels when relative humidity is added to the actual air temperature. The NWS will initiate alert procedures when the HI is expected to exceed 105°F for at least two consecutive days. Possible heat disorders related to the corresponding HI are listed below.

Heat Index of 130 or Higher	Heatstroke/Sunstroke; exposure for people in higher risk groups
Heat Index of 105-130	Sunstroke, heat cramps, and heat exhaustion likely and heatstroke possible with prolonged physical activity
Heat Index of 90-105	Sunstroke, heat cramps with prolonged exposure
Heat Index of 80-90	Fatigue possible with prolonged exposure and physical activity

This chart represents the averages and potential extreme temperatures of south Florida.

South FL Monthly Averages

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg Temp	65°	66°	70°	73°	78°	81°	82°	83°	82°	78°	72°	67°
Record High	87° '91	90° '49	94° '77	99° '71	96° '71	98° '98	99° '83	98° '63	96° '51	95° '59	91° '92	88° '89
Record Low	27° '77	32° '89	30° '80	43° '87	51° '92	61° '84	68° '75	66° '50	67° '83	46° '68	36° '50	28° '89
Avg Rain	2.8"	2.7"	3.7"	2.9"	6.1"	8.1"	6.1"	6.0"	8.5"	6.6"	4.7"	2.5"

3.1.1.7 Agricultural Pest and Disease

Florida is among the top three agriculture-producing states in the nation. Agriculture generates farm cash receipts of nearly $6 billion annually, of which citrus and vegetable crops contribute more than 40 percent. The industry is susceptible to many hazards including freezes, droughts, and exotic pests or diseases. Agricultural crops are grown throughout the state and every region is vulnerable to the effects of an exotic pest or disease infestation. As a result, Florida uses the second highest volume of pesticides in the nation.

Agriculture and citrus production play a key role in the Palm Beach County economy; 54% of the county is farmland. The main threats to the Palm Beach County agriculture industry are Citrus Canker, Tomato Yellow Leaf Curl Virus (TYLCV), the Mediterranean Fruit Fly (Medfly), and sugarcane pests.

Citrus Canker

Citrus Canker was found in Palm Beach County in numerous locations in 2002. The Florida Department of Agriculture reported cases of orange and grapefruit trees infected in the southern and northern parts of the county. Citrus Canker is a bacterial disease that causes premature leaf and fruit drop. It affects all types of citrus, including oranges, sour oranges, grapefruit, tangerines, lemons, and limes. Symptoms found on leaves and fruit are brown, raised lesions surrounded by an oily, water-soaked area and a yellow ring or halo (Florida Department of Agriculture and Consumer Services).

There is no known chemical compound that will destroy the Citrus Canker bacteria. In order to eradicate the disease, infected trees must be cut down and disposed of properly. In 2002, legal cases over the cutting down of infected and exposed trees began when citrus canker was discovered in Palm Beach County. The Florida Department of Agriculture wanted to search a 70-square-mile area in the county for diseased trees. It is a highly contagious disease that can be spread rapidly by windborne rain, lawnmowers and other landscaping equipment, animals and birds, people carrying the infection on their hands or clothing, and moving infected or exposed plants or plant parts (Florida Department of Agriculture and Consumer Services). There is great potential to impact Florida's $9.1 billion citrus industry.

Tomato Yellow Leaf Curl Virus (TYLCV)

This virus is believed to have entered the state in Dade County sometime in early 1997.

Symptoms vary among tomato types, but in general, leaves produced shortly after infection are reduced in size, distorted, cupped inward or downward, and have a yellow mottle. Fewer than one in ten flowers will produce fruit after TYLCV infection, severely reducing yields.

The virus is transmitted by adult silverleaf whiteflies. Although frequent applications of pesticides help to decrease whitefly populations and suppress the spread of TYLCV, virus management through whitefly control is not possible in years where whitefly populations are high. Fortunately, the virus is not transmitted through seed or casual contact with infected plants (Polston & Brown, 1997).

Mediterranean Fruit Fly (Medfly)

Another threat to Palm Beach County's agriculture industry is the Medfly. It is one of the world's most destructive pests and infests more than 250 different plants that are important for U.S. food producers, homeowners and wildlife. It is considered the greatest pest threat to Florida's $1.5 billion citrus crop, as well as endangering many other economically significant crops (Florida Department of Agriculture and Consumer Services). For example, a Medfly outbreak in 1997 cost an estimated $26 million to eradicate. If a long-term or widespread Medfly infestation were to occur, Florida growers would not be permitted to ship numerous fruit and vegetable crops to many foreign and domestic markets. The movement of fruits and vegetables, even within the state, would be disrupted, which could lead to higher prices in the supermarket. If the Medfly is not eradicated in Florida, on-going pesticide treatments by homeowners and commercial growers will be necessary. Costly post-harvest treatment of fruits and vegetables to meet quarantine restrictions of domestic and foreign markets would also be required.

Adult Medflies are up to 1/4 inch long, black with yellow abdomens, and have yellow marks on their thoraxes. Their wings are banded with yellow. The female Medfly damages produce by laying eggs in the host fruit or vegetable. The resulting larvae feed on the pulp, rendering the produce unfit for human consumption. In addition to citrus, Medflies will feed on hundreds of other commercial and backyard fruit and vegetable crops.

Because Medflies are not strong fliers, the pest is spread by the transport of larval-infested fruit. The major threats come from travelers, the U.S. mail, and commercial fruit smugglers. Several steps have been taken to prevent new infestations. State and federal officials are working with postal authorities to develop ways to inspect packages suspected of carrying infested fruit. In addition, public education efforts carrying the message, "Don't Spread Med" are being expanded (Florida Department of Agriculture and Consumer Services).

Sugarcane Pests

Changes in sugarcane agriculture, including new disease and insect pests have seriously impacted the quality of cane and juice delivered to the mill for processing. These changing developments affect the level of sucrose, purity, fiber, and color of cane resulting in a loss of sugar and decrease in the quantity and quality of sugar produced (United States Department of Agriculture, 1998).

3.1.1.8 Wildfire/Urban Interface Zone

The recent wildfires that burned throughout Florida, specifically central Florida, are examples of the increasing wildfire threat, which results from the Wildland/Urban Interface. The Wildland/Urban Interface is defined as the area where structures and other human development

meet with undeveloped wildland or vegetative fuels (Federal Emergency Management Agency, 1996). As residential areas expand into relatively untouched wildlands, people living in these communities are increasingly threatened by wild fires.

There are three different classes of wildland fires. A surface fire is the most common type and burns along the floor of a forest, moving slowly and killing or damaging trees. A ground fire is usually started by lightning and burns on or below the forest floor. Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees. Wildland fires are usually identified by dense smoke that fills the area for miles around.

Rural and large tracts of unimproved lands are susceptible to brush and forest fires capable of threatening life, safety and property loss in adjacent developed areas if not effectively controlled. Wildfires are caused by numerous sources including arson, carelessness by smokers, individuals burning debris, operating equipment which throws sparks, and children playing with matches. However, the largest number of fires is caused by lightning strikes which coincides with the height of the thunderstorm season. A major wildland fire can leave a large amount of scorched and barren land, and these areas may not return to prefire conditions for decades. If the wildland fire destroys the ground cover, other potential hazards, such as erosion, may develop (Federal Emergency Management Agency, 1998).

Structures in the wildland/urban interface zone are vulnerable to ignition in three different ways: radiation, convection, and firebrands (National Wildland/Urban Interface Fire Protection Program). Radiating heat from a wildfire can cause ignition by exposure to the structure. The chances of ignition increase as the size of the flames increases, surface area exposed to flames increases, length of exposure time increases, and distance between the structure and the flames decreases. Another source of ignition by wildfire is convection. Ignition of a structure by convection requires the flame to come in contact with the structure. Contact with the convection column is generally not hot enough to ignite a structure. Clearing to prevent flame contact with the structure must include any materials capable of producing even small flames. Wind and steep slopes will tilt the flame and the convection column uphill increasing the chance of igniting a structure. Structures extending out over a slope have the greatest likelihood of ignition from convection.

Firebrands also pose a threat to structures in the wildland/urban interface. A firebrand is a piece of burning material that detaches from a fire due to strong convection drafts in the burning zone. They can be carried a long distance (approximately 1 mile) by fire drafts and winds. The chance of these firebrands igniting a structure depends on the size of the firebrand, how long it burns after contact, and the materials, design, and construction of the structure.

On April 15, 1999, just north of Palm Beach County in Port St. Lucie, a wildfire consumed 43 homes in 24 hours. Every fire unit in St. Lucie County and assistance from Indian River, Martin, Palm Beach, Broward and Okeechobee Counties and units from two Division of Forestry Districts, two helicopters and a Type 1 Air Tanker contained the fire after 36 hours. Due to the near perfect wildfire conditions, the fire suppression units were unable to keep up with these rapidly moving fires. The estimated damage was $4.2 million. Over 5,000 people were evacuated, most self evacuated from the area.

On Thursday, April 10, 2003, a brush fire occurred in a heavily wooded area just east of the Acreage on the north side of Northlake Boulevard. Fueled by high winds, and low humidity, the fire eventually burned approximately 450 acres, destroyed a number of vehicles and trailers stored on the property, and required several days to fully extinguish. A helicopter was called in

to aid in extinguishing the wildfire. The helicopter made a total of 58 water drops. A loss of $250,000 of timber was lost in relation to the wildfire.

3.1.1.9 Muck Fire

A muck fire is a fire that consumes all the organic material of the forest floor and also burns into the underlying soil. It differs from a surface fire by being invulnerable to wind. If the fire gets deep into the ground, it could smoulder for several years. In a surface fire, the flames are visible and burning is accelerated by wind, whereas in a muck fire wind is not generally a serious factor (Canadian Soil Information System, 1996). Another extraordinary fact about muck fires has to do with their release of carbon dioxide. A peat bog that is on fire can release more carbon dioxide into the atmosphere than all the power stations and car engines emit in Western Europe in one year (New Scientist, 1997). This type of fire could have a significant impact on global warming.

Muck fires are not a frequent threat to Florida. However, during a drought in the 1980s, fires in the Everglades consumed the rich, dried out muck that had once been the bottom of the swamp. These fires burned deep into the ground and required specialized, non-traditional firefighting techniques.

A muck fire occurred in June of 1999. There were about 20,000 acres of muck, brush and sawgrass on fire in the Rotenberger Wildlife Management Area located in Southwestern Palm Beach County.

In May 2008 a muck fire, spawned by an extended drought, scorched the dried up edges of Lake Okeechobee between Moore Haven and Clewiston covering an area of over 5,800 acres.

3.1.1.10 Soil/Beach Erosion

Soil Erosion

Soil erosion is the deterioration of soil by the physical movement of soil particles from a given site. Wind, water, animals, and the use of tools by man may all be reasons for erosion. The two most powerful erosion agents are wind and water; but in most cases these are damaging only after man, animals, insects, diseases, or fire have removed or depleted natural vegetation. Accelerated erosion caused by human activity is the most serious form of soil erosion because the rate is so rapid that surface soil may sometimes be blown or washed away right down to the bedrock.

Undisturbed by man, soil is usually covered by shrubs and trees, by dead and decaying leaves or by a thick mat of grass. Whatever the vegetation, it protects the soil when the rain falls or the wind blows. Root systems of plants hold the soil together. Even in drought, the roots of native grasses, which extend several feet into the ground, help tie down the soil and keep it from blowing away. With its covering of vegetation stripped away, soil is vulnerable to damage. Whether the plant cover is disturbed by cultivation, grazing, deforestation, burning, or bulldozing, once the soil is bare to the erosive action of wind and water, the slow rate of natural erosion is greatly increased. Losses of soil take place much faster than new soil can be created, and a kind of deficit spending of topsoil begins. With the destruction of soil structure, eroded land is even more susceptible to erosion.

The occurrence of erosion has greatly increased, usually at a rate at which soils cannot be

sustained by natural soil regeneration. This is because of the activities of modern development and population growth, particularly agricultural intensification. It is also in the field of agriculture that most efforts have been made to conserve soils, with mixed success (Union of International Associations).

Beach Erosion

Wind, waves, and longshore currents are the driving forces behind coastal erosion. This removal and deposition of sand permanently changes beach shape and structure. Most beaches, if left alone to natural processes, experience natural shoreline retreat. As houses, highways, seawalls, and other structures are constructed upon or close to the beach, the natural shoreline retreat processes are interrupted. The beach jams up against these man-made obstacles and narrows considerably as the built-up structures prevent the beach from moving naturally inland. When buildings are constructed close to the shoreline, coastal property soon becomes threatened by erosion. The need for shore protection often results in "hardening" the coast with a structure such as a seawall or revetment.

A seawall is a large, concrete wall designed to protect buildings or other man-made structures from beach erosion. A revetment is a cheaper option constructed with "rip rap" such as large boulders, concrete rubble, or even old tires. Although these structures may serve to protect beachfront property for a while, the resulting disruption of the natural coastal processes has consequences for all beaches in the area. Seawalls inhibit the natural ability of the beach to adjust its slope to the ever changing ocean wave conditions. Large waves wash up against the seawall and rebound back out to sea carrying large quantities of beach sand with them. With each storm the beach narrows, sand is lost to deeper water, and the longshore current scours the base of the wall. Eventually large waves impact the seawall with such force that a bigger structure becomes necessary to continue to resist the forces of the ocean (Pilkey and Dixon, 1996).

Recent erosion events include:

Hurricanes Frances & Jeanne (September 2004). Both Hurricanes Frances and Jeanne in 2004 equaled or exceeded the 100 year return period for storm surge in St Lucie, Indian River and southern Brevard Counties when they made landfall on the Martin County shoreline. The highest measured surge level for Category 2 Hurricane Frances was 11.8' (NGVD). The highest surge level for Category 3 Hurricane Jeanne was 10.8' (NGVD). Surge levels in Palm Beach County were significantly lower. Both storms caused significant beach erosion along the coastline of Palm Beach County.

Tropical Storm Noel November 2007. Between November 1 and November 4, 2007, high surf associated with Tropical Storm Noel battered the Palm Beach County coast. Hardest hit spots were beaches in Jupiter, Singer Island and South Palm Beach/Lantana, where severe to locally extreme beach erosion occurred. A steel sea wall protecting the Condado condominium complex in Singer Island collapsed, causing cracks to form in the outer walls of the building. In some areas, the dune line was completely eroded, leaving oceanfront buildings sitting precariously on top of 15 foot cliffs looking straight down to the water. A sea wall at the Imperial House condominiums in South Palm Beach collapsed from the pounding surf, and the east portion of the building was evacuated. South of Lantana to Boca Raton, erosion was reported as moderate to severe. Total damage for the County (minus beach restoration costs) was estimated at $4 million. No tide measurements were available from Palm Beach County, but storm tide was estimated to have been as high as two to three feet over northern Palm Beach

County. A strong pressure gradient between high pressure over the Mid-Atlantic states and Tropical Storm Noel over Hispaniola and eastern Cuba caused a prolonged period of strong easterly winds over Southeast Florida and the adjacent waters. As Noel moved north across the western Bahamas, the strong winds continued across southeast Florida. The event caused severe beach erosion, coastal flooding, and minor wind damage. The event began in the last week of October.

3.1.1.11 Seismic Hazards

Tsunamis

Recent, widely published, research by British and American scientists warned of potential catastrophic destruction of coastal areas of the Atlantic, including the Florida east coast, by mega tsunami waves generated by a future volcanic collapse in the Canary Islands. The research predicted a gigantic wave would traverse the Atlantic at jet aircraft speeds and devastate the Florida coast as far as ten miles inland. Such an event would present a tremendous warning challenge and a virtually impossible evacuation response. Subsequent research by the Tsunami Society, a body of scientists solely dedicated to the study of tsunamis, has concluded the threat has been grossly overstated. The society challenged many of the assumptions made relative to the probability and magnitude of a collapse on La Palma and the characteristics of waves should such a collapse occur. The Society notes that there have been no such mega-tsunami events in the Atlantic or Pacific oceans in recorded history. However, the deadly Asian tsunami in December of 2004 has rekindled interest in revisiting the research.

The threat of a tsunamis impacting Palm Beach County is considered to be extremely low (on the order of 5% or less per century). Tsunamis are most often generated by earthquake-induced movement of the ocean floor. Landslides, volcanic eruptions, and even meteorites can also generate a tsunami. They are often incorrectly referred to as tidal waves, but a tsunami is actually a series of waves that can travel at speeds averaging 450 (and up to 600) miles per hour in the open ocean. In the open ocean, tsunamis would not be felt by ships because the wavelength would be hundreds of miles long, with an amplitude of only a few feet. This would also make them unnoticeable from the air. As the waves approach the coast, their speed decreases and their amplitude increases. Unusual wave heights have been known to be over 100 feet high. However, waves that are 10 to 20 feet high can be very destructive and cause many deaths or injuries.

Earthquakes

Although Florida is not usually considered to be a state subject to earthquakes, several minor shocks have occurred over time, but only one caused any damage (Zirbes, 1971). Earthquakes will not be discussed further in this plan as they pose no risk to the county.

- In January 1879, a shock occurred near St. Augustine that is reported to have knocked plaster from walls and articles from shelves. Similar effects were reported in Daytona Beach. The shock was felt in Tampa, throughout central Florida, and in Savannah, Georgia as well (Zirbes, 1971).

- In January 1880 another earthquake occurred, this time with Cuba as the focal point. Shock waves were sent as far north as the town of Key West (Zirbes, 1971).

- In August 1886, Charleston, South Carolina was the center of a shock that was felt throughout northern Florida. It rang church bells in St. Augustine and severely jolted other towns along sections of Florida's east coast. Jacksonville residents felt many of the strong aftershocks that occurred in September, October, and November, 1886 (Zirbes, 1971).

- In June 1893, Jacksonville experienced a minor shock that lasted about 10 seconds. Another earthquake occurred in October 1893, and did not cause any damage either (Zirbes, 1971).

- In November 1948, doors and windows rattled in Captiva Island, west of Ft. Myers. It was reportedly accompanied by sounds like distant heavy explosions (Zirbes, 1971).

- In November 1952, a slight tremor was felt in Quincy, a town located 20 miles northwest of Tallahassee. Windows and doors rattled, but no damage was reported (Zirbes, 1971).

3.1.1.12 Geologic Hazards

Sinkholes and Subsidence

Sinkholes are a common feature of Florida's landscape. They are only one of many kinds of karst land forms, which include caves, disappearing streams, springs, and underground drainage systems, all of which occur in Florida. Karst is a generic term which refers to the characteristic terrain produced by erosional processes associated with the chemical weathering and dissolution of limestone or dolomite, the two most common carbonate rocks in Florida. Dissolution of carbonate rocks begins when they are exposed to acidic water. Most rainwater is slightly acidic and usually becomes more acidic as it moves through decaying plant debris. Limestones in Florida are porous, allowing the acidic water to percolate through them, dissolving some limestone and carrying it away in solution. Over time, this persistent erosion process has created extensive underground voids and drainage systems in much of the carbonate rocks throughout the state. Collapse of overlying sediments into the underground cavities produces sinkholes (Florida Geological Survey, 1998).

3.1.1.13 Epidemics

Infectious diseases emerging throughout history have included some of the most feared plagues of the past. New infections continue to emerge today, while many of the old plagues are still with us. As demonstrated by influenza epidemics, under suitable circumstances, a new infection first appearing anywhere in the world could travel across entire continents within days or weeks (Morse, 1996). Due to the potential of complex health and medical conditions that can threaten the general population, Florida's vulnerability to an epidemic is continually monitored. With millions of tourists arriving and departing the state annually, disease and disease exposure (airborne, vector, and ingestion) are constantly evaluated and analyzed.

Primarily as a result of the entrance of undocumented aliens into south Florida, and the large number of small wildlife, previously controlled or eradicated diseases have surfaced. Health officials closely monitor this potential threat to the public health. The emphasis upon preventive medical measures such as school inoculation, pet licensing, rodent/insect eradication, water purification, sanitary waste disposal, health inspections, and public health education mitigate this potential disaster.

Another potential threat to south Florida's population is food contamination. Frequent news stories document that *E.coli* and botulism breakouts throughout the country are not that uncommon. Most recently, millions of pounds of possibly contaminated beef from the Hudson packing plant were seized by the Department of Agriculture and destroyed.

Avian (Bird Flu) H5N1

Although there are many forms of bird flu, the form that has most recently concerned health officials is the H5N1 flu virus carried by wild birds (many migratory). While wild birds seldom get sick from the virus, they can easily pass the virus to farm birds such as chickens, ducks, and turkeys being raised for food. These farm birds get sick, which poses a serious health risk. It is thought that both the 1957 Asian Flu and the 1968 Hong Kong Flu pandemics had avian origins. Quarantine and depopulation (culling) and surveillance of affected flocks have helped contain outbreaks. The current bird flu virus originated in Hong Kong in 1997 and disappeared after that. It reemerged in 2003 and has since caused havoc worldwide.

Historically, bird flu viruses had not been passed from birds to humans. But, that changed in 1997, when people became infected by a serious, deadly form of bird flu. Most of these infections occurred in Asian countries among people who had had close contact with farm-raised birds. Sick birds had to be killed in great numbers in hopes of stopping the spread of the virus. It was suspected that the bird flu virus was passed to humans through bird droppings, saliva or contaminated surfaces on cages, tractors, and other farm equipment.

Because viruses can change (mutate) quickly, experts worry that bird flu will one day be passed easily from person to person. The H5N1 bird flu virus has proven to be extremely lethal. Even though only a few hundred people thus far have been stricken by the H5N1 virus, more than half of those have died.

The first case of H5N1 was traced to a farmed goose in China in 1996. Human infections were first reported in Hong Kong in 1997 (18 cases, 6 fatal). According to the World Health Organization, who monitors global disease outbreaks, as of April 2009, there have been approximately 417 human cases and 257 deaths in 15 countries from H5N1 influenza, none in the United States. The highest number of cases and deaths occurred in Indonesia (141 cases, 115 deaths) and in Vietnam (110 cases, 55 deaths). Other countries with cases and deaths have included Egypt, China and Thailand.

In June 2006 the World Health Organization confirmed a human to human transmission of the bird flu in Indonesia. Although the H5N1 virus had mutated, the mutation apparently was not severe enough to trigger an avian influenza pandemic. Experts believe, however, that the virus may eventually spread to all parts of the world.

Swine Flu A (H1N1)

One way an antigenic shift can occur is through pigs. Pigs can be infected with both avian and human influenza viruses. If pigs become infected with viruses from different species at the same time, it is possible for genes of the viruses to mix and create a new virus for which humans have no natural immunity.

The spread of a new strain of an H1N1 influenza virus was detected in late March 2009. Localized outbreaks of influenza-like illnesses were first discovered in three areas in Mexico and subsequently in the United State and Canada. Its presence was quickly suspected on most continents, with over 1,600 candidate cases identified in the first month. On April 25, 2009, the

World Health Organization (WHO) declared the situation to be a formal “public health emergency of international concern.”

In an interview on April 24, acting Center for Disease Control (CDC) Director Richard Bessar said that it was still not understood why the early American cases were generally mild (no deaths and only one of the 20 confirmed cases hospitalized) while the Mexican cases led to multiple deaths. Differences in the viruses and co-infection were being considered as possible explanations. At this writing, only fourteen samples from Mexico had been tested by the CDC, with seven found to match the American strain. Dr. Bessar went on to say that the virus had likely passed through several cycles of infection with no known linkages between patients in Texas and California. He believed that, ultimately containment of the virus was "not very likely."

Over 1000 cases of suspected swine flu in humans were detected in Mexico and the southwestern United States in March and April of 2009. The strain was unusually lethal in Mexico, causing 103 deaths (20 confirmed at this writing), mostly in Mexico City. Cases were also reported in the states of San Luis Potosí, Hidalgo, Querétaro and Mexico State, all in central Mexico. The Mexican fatalities were mainly young, previously healthy adults of 25 to 45, a frequently observed hallmark of pandemic flu.

The origins of the new virus are not known. One theory is that Asian and European strains traveled to Mexico via migratory birds or human travelers, then combined with North American strains in Mexican pig factory farms before jumping over to farm workers. The

Mexican health agency believes the original disease vector may have been flies multiplying in manure lagoons of pig farms.

The American cases were found to be made up of genetic elements from four different flu viruses, the North American swine influenza, the North American avian influenza, human influenza, and swine influenza typically found in Asia and Europe.

Within one month of detection, officials in the United States had confirmed that seven people in California, two students from a high school in Texas, and a married couple in Kansas were infected with A/09(H1N1) swine flu; all recovered. New York state had confirmed cases as well. The cases in Kansas and New York were linked to travel to Mexico; most of the cases in California and Texas were not linked to travel, suggesting localized outbreaks of the virus. At this writing, isolated cases of suspected swine flu were surfacing across the U.S. and abroad daily. Deaths will certainly result. Government health agencies continue to closely monitor developments.

West Nile Virus

The Palm Beach County Health Department reported cases of the West Nile Virus in 2002 and 2003. This disease is transmitted by mosquitoes. Health notifications were given throughout the county both years to alert and caution the public. Individuals were advised to take precautions when outdoors and to try to avoid being outside after dusk.

Mosquitoes become infected when they feed on infected birds, which may circulate the virus in their blood for a few days. Infected mosquitoes can then transmit West Nile virus to humans and animals while biting. The virus is located in the mosquito's salivary glands. During feeding, the virus may be injected into the animal or human, where it may multiply, possibly causing illness. The more DEET a repellent contains the longer time it can protect you from mosquito bites.

Most people who are infected with the West Nile virus will not have any type of illness. It is estimated that 20% of the people who become infected will develop West Nile fever: mild symptoms, including fever, headache, and body aches, occasionally with a skin rash on the trunk of the body and swollen lymph glands.

The symptoms of severe infection (West Nile encephalitis or meningitis) include headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, and paralysis. It is estimated that 1 in 150 persons infected with the West Nile virus will develop a more severe form of disease.

SARS

Severe Acute Respiratory Syndrome (SARS) is a viral respiratory illness caused by a corona virus, called SARS-associated corona virus (SARS-CoV). SARS was first reported in Asia in February 2003. Over the next few months, the illness spread to more than two dozen countries in North America, South America, Europe, and Asia. According to the World Health Organization (WHO), during the SARS outbreak of February – July 2003, a total of 8,437 people worldwide became sick with SARS; of these, 813 died. In the United States, there were 192 cases of SARS among people, all of whom got better. There were eight cases reported in Florida. However, Palm Beach County had no reported cases of SARS.

The main way that SARS seems to spread is by close person-to-person contact. The virus that causes SARS is thought to be transmitted most readily by respiratory droplets (droplet spread) produced when an infected person coughs or sneezes. Droplet spread can happen when droplets from the cough or sneeze of an infected person are propelled a short distance (generally up to 3 feet) through the air and deposited on the mucous membranes of the mouth, nose, or eyes of persons who are nearby. The virus also can spread when a person touches a surface or object contaminated with infectious droplets and then touches his or her mouth, nose, or eye(s). In addition, it is possible that the SARS virus might spread more broadly through the air (airborne spread) or by other ways that are not now known.

Malaria

About 1,200 cases of malaria are diagnosed in the United States each year. Most cases in the United States are in immigrants and travelers returning from malaria-risk areas, mostly from sub-Saharan Africa and the Indian subcontinent. Each year in the United States a few cases of malaria result from blood transfusions, are passed from mother to fetus during pregnancy, or are transmitted by locally infected mosquitoes. For the year 2003, as of September 14th, eight cases of malaria were reported in Palm Beach County.

Humans get malaria from the bite of a malaria-infected mosquito. When a mosquito bites an infected person, it ingests microscopic malaria parasites found in the person's blood. The malaria parasite must grow in the mosquito for a week or more before infection can be passed to another person. If, after a week, the mosquito then bites another person, the parasites go from the mosquito's mouth into the person's blood. The parasites then travel to the person's liver, enter the liver's cells, grow and multiply. During this time when the parasites are in the liver, the person has not yet felt sick. The parasites leave the liver and enter red blood cells; this may take as little as 8 days or as many as several months. Once inside the red blood cells, the parasites grow and multiply. The red blood cells burst, freeing the parasites to attack other red blood cells. Toxins from the parasite are also released into the blood, making the person feel sick.

Symptoms of malaria include fever and flu-like illness, including chills, headache, muscle aches, and tiredness. Nausea, vomiting, and diarrhea may also occur. For most people, symptoms begin ten days to four weeks after infection, although a person may feel ill as early as 8 days or as late as one year later.

Any traveler who becomes ill with a fever or flu-like illness while traveling to Malaria risk areas and up to one year after returning home should immediately seek professional medical care. A person should tell his/her health care provider that they have been traveling in a malaria-risk area.

Persons living in, and travelers to, any area of the world where malaria is transmitted may become infected. Malaria can be cured with prescription drugs.

3.1.2 TECHNOLOGICAL HAZARDS

3.1.2.1 Dike Failure

Dam/levee failure poses a minor threat to population and property in several areas of Palm Beach County. All are earthen structures and are state, regionally, locally, or privately controlled. The most significant risk related to dam/levee failure is flooding due to substantial rainfall and its eastward migration to final discharge in the Indian River Lagoon. Structural and non-structural techniques to slow and contain this runoff incorporate several drainage systems, some dating back to 1919. Rainfall in excess of designed capacities could cause erosion of constructed drainage facilities and flooding of many areas including primary roadway evacuation routes (Palm Beach County Comprehensive Emergency Management Plan, 2002).

The Herbert Hoover Dike was completed in 1937 to protect Palm Beach County citizens from experiencing another flooding event similar to the occurrence in 1928. The flooding derived from the 1928 hurricane, which resulted in over 2,500 deaths and thousands more injured in the western portion of Palm Beach County. The dike protects from major flooding events occurring in Belle Glade, Pahokee, and South Bay municipalities. Also, there is a potential for flooding in The Village of Wellington, Royal Palm Beach, West Palm Beach, Palm Beach Gardens, and unincorporated Palm Beach County. The Herbert Hoover Dike is continuously monitored by the Army Corp of Engineers. Until work to stabilize the dike is completed by the Army Corp of Engineers, there is the potential for stability problems and/or seepage to occur from heavy rainfall raising the level of the lake above 18 feet.

A number of independent assessments by prominent engineering and science organizations call into question the adequacy of the dike to withstand extreme wind and rainfall conditions. There is consensus that a catastrophic failure of the Herbert Hoover Dike would pose a significant danger to the residents, local economies and environment of Palm Beach County and South Florida.

3.1.2.2 Hazardous Materials Accident

Hazardous materials accidents can occur anywhere there is a road, rail line, pipeline, or fixed facility storing hazardous materials. Virtually the entire state is at risk to an unpredictable accident of some type. Most accidents are small spills and leaks, but some result in injuries, property damage, environmental contamination, and other consequences. These materials can be poisonous, corrosive, flammable, radioactive, or pose other hazards and are regulated by the

Department of Transportation. Out of approximately 1,663 hazardous materials incidents reported statewide in 1997, no known fatalities were reported, less than four percent resulted in injuries, and less than six percent resulted in evacuation.

Emergencies involving hazardous materials can be expected to range from a minor accident with no off-site effects to a major accident that may result in an off-site release of hazardous or toxic materials. The overall objective of chemical emergency response planning and preparedness is to minimize exposure for a wide range of accidents that could produce off-site levels of contamination in excess of Levels of Concern (LOC) established by the U.S. Environmental Protection Agency. Minimizing this exposure will reduce the consequences of an emergency to people in the area near to facilities which manufacture, store, or process hazardous materials (Treasure Coast Regional Planning Council).

A large volume of hazardous materials are transported to and through the county by railroad, highway, air, water, and pipeline daily. Within Palm Beach County, there are a number of both public and private fixed facilities which produce or use hazardous materials. Coordinating procedures for hazardous material response are found within the County's Emergency Plan for Hazardous Materials.

In addition to the County's Emergency Plan for Hazardous Materials, Local Emergency Planning Committee (LEPC) officials have prepared a plan for use in responding to and recovering from a release of hazardous or toxic materials. This plan addresses the range of potential emergency situations and the appropriate measures to be implemented to minimize exposure through inhalation, ingestion, or direct exposure.

Mishandling and improper disposal or storage of medical wastes and low-level radioactive products from medical use are also a hazard to Palm Beach County. For example, a few years ago an incident occurred in New Jersey when improper disposal of medical wastes resulted in some of the used products ending up on Atlantic Ocean beaches.

3.1.2.3 Radiological Accidents

While an actual release of radioactive material is extremely unlikely and the immediate threat to life extremely low, vulnerability to a nuclear plant disaster could consist of long range health effects with temporary and permanent displacement of populations from affected areas. The potential danger from an accident at a nuclear power plant is exposure to radiation. This exposure could come from the release of radioactive material from the plant into the environment, usually characterized by a plume (cloud-like) formation. The area the radioactive release might affect is determined by the amount released from the plant, wind direction and speed and weather conditions (i.e., rain, snow, etc.) which would quickly drive the radioactive material into the ground, causing increased deposition of radio nuclides.

The levels of response to the release of radioactive materials is as follows:

- Notification of Unusual Event - The event poses no threat to plant employees, but emergency officials are notified. No action by the public is necessary.

- Alert - An event has occurred that could reduce the plant's level of safety, but back-up systems still work. Emergency agencies are notified and kept informed, but no action by the public is necessary.

- Site Area Emergency - The event involves major problems with the plant's safety and has progressed to the point that a release of some radioactivity into the air or water is possible, but is not expected to exceed Environmental Protection Agency Protective Action Guidelines (PAGs). Thus, no action by the public is necessary.

- General Emergency - The event has caused a loss of safety systems. If such an event occurs, radiation could be released that would penetrate the site boundary. State and local authorities will take action to protect the residents living near the plant. The alert and notification system will be sounded. People in the affected areas could be advised to evacuate, or in some situations, to shelter in place. When the sirens are sounded, radio and television alert will have site-specific information and instructions.

Thirty of the 67 counties in the State of Florida are involved in preparedness planning for a commercial nuclear power plant emergency.

The St. Lucie nuclear power plant is located on Hutchinson Island approximately four miles east-northeast of the City of Port St. Lucie, approximately 5.5 miles north of Martin County/St. Lucie County boundary line. This facility is owned and operated by the Florida Power & Light Company. Palm Beach County is located more than 30 miles from the plant and is well outside the 10 mile Emergency Planning Zone/potential plume area, so there is not a risk to direct radiation exposure. Therefore, the county would provide assistance to St. Lucie and Martin Counties in the unlikely chance of an accident at the plant. Palm Beach County municipalities located in part or whole within 50 miles of the power plant (Tequesta, Jupiter Inlet Colony, Jupiter, Juno Beach, Palm Beach Gardens, North Palm Beach, Lake Park, Riviera Beach, Mangonia Park, West Palm Beach, Palm Beach, Pahokee, Royal Palm Beach, Haverhill, Glen Ridge, Wellington, Palm Springs, Greenacres and Lake Clarke Shores) fall within the 'Ingestion Pathway Zone' meaning if there is a major release at the power plant, radioactive contamination could be deposited as far as 50 miles affecting food and water supplies.

The purpose of the county radiological preparedness program is to prepare to receive, shelter and decontaminate (if necessary) potentially contaminated evacuees from an accident at the St. Lucie nuclear power plant. A radiological emergency response plan is developed and exercised in order to have reasonable assurance that adequate protective measures can be taken in the event of a radiological emergency.

3.1.2.4 Communications Failure

As society emerges from industrial production into the age of information, we are seeing new kinds of technological accidents/disasters. Recently, a communications failure occurred that was the worst in 37 years of satellite service. Some major problems with the telecommunications satellite Galaxy IV drastically affected 120 companies in the paging industry (Rubin, 1998). Radio and other forms of news broadcasts were also affected. The pager failure not only affected personal and business communications, but emergency managers and medical personnel as well. More commonly, communication failures occur due to power outages.

3.1.2.5 Hazardous Materials Release

A large volume of hazardous materials are transported to and through the county by railroad, highway, air, water, and pipeline daily, on a routine basis. Within Palm Beach County, there are

a number of both public and private fixed facilities, which produce or use hazardous materials. Coordinating procedures for hazardous material response are found within the County's Emergency Plan for Hazardous Materials.

Mishandling and improper disposal or storage of medical wastes and low-level radioactive products from medical use are also a hazard to Palm Beach County. A few years ago an incident occurred in New Jersey when improper disposal of medical wastes resulted in used products ending up on Atlantic Ocean beaches.

3.1.2.6 Transportation System Accidents

Florida has a large transportation network consisting of major highways, airports, marine ports, and passenger railroads. The heavily populated areas of Palm Beach County are particularly vulnerable to serious accidents, which are capable of producing mass casualties. With the linear configuration of several major highways in Palm Beach County, such as Interstate highways and the Florida Turnpike, major transportation accidents could occur in a relatively rural area, severely stressing the capabilities of local resources to respond effectively. A recent notorious example is the crash in the Everglades of the Value Jet Flight 597 on May 11, 1996, which resulted in 109 fatalities and cost millions of dollars to respond, severely taxing the financial and public safety resources of Dade County. Similarly, a major transportation accident could involve a large number of tourists and visitors form other countries, given Florida's popularity as a vacation destination, further complicating the emergency response to such an event.

Coastal Oil Spill

As a major industrial nation, the United States produces, distributes, and consumes large quantities of oil. Petroleum-based oil is used as a major power source to fuel factories and various modes of transportation, and in many everyday products, such as plastics, nylon, paints, tires, cosmetics, and detergents. At every point in the production, distribution, and consumption process, oil is invariably stored in tanks. With billions of gallons of oil being stored throughout the country, the potential for an oil spill is significant, and the effects of spilled oil can pose serious threats to the environment.

In addition to petroleum-based oil, the U.S. consumes millions of gallons of non-petroleum oils, such as silicone and mineral-based oils, and animal and vegetable oils. Like petroleum products, these non-petroleum oils are often stored in tanks that have the potential to spill, causing environmental damages that are just as serious as those caused by petroleum-based oils. To address the potential environmental threat posed by petroleum and non-petroleum oils, the U.S. Environmental Protection Agency has established a program designed to prevent oil spills. The program has reduced the number of spills to less than 1 percent of the total volume handled each year (Environmental Protection Agency, 1998).

Spilled oil poses serious threats to fresh water and marine environments, affecting surface resources and a wide range of subsurface organisms. Most oils tend to spread horizontally into a smooth and slippery surface, called a slick, on top of the water. However, once the oil reaches the shoreline it can escape downward into sand, making it difficult to clean up and reducing its ability to degrade. Spilled oil can harm the environment in several ways, including the physical damages that directly impact wildlife and their habitats (such as coating birds or mammals with a layer of oil), and the toxicity of the oil itself, which can poison exposed organisms.

Not only would an oil spill adversely affect the environment, but the economy would suffer due to a decrease in tourism. Depending on the severity of the spill, the economy could suffer mild, short-term effects to devastating, long-term effects.

Many advanced response mechanisms are available for controlling oil spills and minimizing their impacts on human health and the environment. Mechanical containment or recovery is the primary line of defense against oil spills. This type of equipment includes a variety of booms, barriers, and skimmers. Natural and synthetic sorbent materials are used as well to capture and store the spilled oil until it can be disposed of properly. Chemical and biological methods can be combined with mechanical means for containing and cleaning up oil spills. Dispersants and gelling agents are most useful in helping to keep oil from reaching shorelines and other sensitive habitats. Physical methods are used to clean up shorelines as well. Wiping with sorbent materials, pressure washing, raking, and bulldozing can be used to assist natural environmental recovery processes. Scare tactics are used to protect birds and animals by keeping them away from oil spill areas.

Palm Beach County has 45 miles of Atlantic Ocean coastline that is subject to contamination caused by an oil spill. By Executive Order, the responsibility for preparing response plans for coastal oil spills is designated to the Department of Environmental Protection, Division of Florida Marine Patrol. There are two active oil field regions in Florida: in Escambia and Santa Rosa counties in the Panhandle, and Collier, Hendry, and Lee counties in southwest Florida.

3.1.2.7 Wellfield Contamination

As communities become more aware of both the potential health risks and the economic effects of ground water contamination, they are beginning to look increasingly toward preventative efforts. Even when no immediate hazard appears to exist, a community should be concerned about protecting its drinking water supply for three reasons: to reduce potential risks to the health of the community; to avoid the costs of cleaning up contamination and providing alternative water supplies; and to prevent the negative economic impacts on community development that ground water contamination can cause.

The development of wellfield protection programs is a major preventative approach for the protection of community drinking water supplies. Wellfield protection is a means of safeguarding public water supply wells by preventing contaminants from entering the area that contributes water to the well or wellfield over a period of time. Management plans are developed for the wellfield protection area that include inventorying potential sources of groundwater contamination, monitoring for the presence of specific contaminants, and managing existing and proposed land and water uses that pose a threat to groundwater quality.

Ground water is a vitally important natural resource. It is a source of drinking water for more than half of the U.S. population and more than 95 percent of the rural population. In addition, ground water is a support system for sensitive ecosystems, such as wetlands or wildlife habitats.

Between 1971 and 1985, there were 245 ground water related outbreaks of disease nationwide, resulting in more than 52,000 individuals being affected by associated illnesses (Browning). While most of these diseases were short-term digestive disorders caused by bacteria and viruses, hazardous chemicals found in wells nationwide also pose risks to public health.

The 1986 Amendments to the federal Safe Drinking Water Act require states to implement

wellfield protection programs for public water wells. Prevention strategies include maintaining the isolation distances from potential contamination sources, reporting to the state violations of the isolation distance to the state, and asking a local governmental unit to regulate these sources.

Cleaning up contaminated ground water can be technically difficult, extremely expensive, and sometimes cannot be done. Contaminated ground water also affects the community by discouraging new businesses or residents from locating in that community.

3.1.2.8 Power Failure (Outages)

In the U.S., from July 2 to August 10, 1996, the Western States Utility Power Grid reported widespread power outages that affected millions of customers in several western states and adjacent areas of Canada and Mexico. These problems resulted from a variety of related causes, including sagging lines due to hot weather, flashovers from transmission lines to nearby trees, and incorrect relay settings. According to the electric utility industry's trade association, the potential for such disturbances is expected to increase with the profound changes now sweeping the electric utility industry.

On August 14, 2003, the largest power outage occurred in the northeast and Midwest states. The power outage started around 3 o'clock in the afternoon and was out in some places until Monday the 18th. There were major cities without power for an extended period of time. Some of the cities included: New York, Cleveland, Detroit, Buffalo and Toronto. The power outage affected millions of people across states and Canada. The source of the outage is unclear at this time. The entire northeast power grid was affected.

In Palm Beach County, the major causes of a power failure are lightning and trees. Lightning strikes and trees falling onto power lines can shut down power for hundreds of people. Other factors that can cause a power failure are:

- Age of facility (transmission and distribution);
- Community growth; and
- High winds.

The location of power lines underground or above ground also has significance. Lines underground have the advantage of being less vulnerable to tree foliage, however they are still at risk from other underground hazards such as tree roots.

To address times when generating capacity is tight, or falls below consumer demand due to state or local emergencies, the Florida Electrical Emergency Contingency Plan was developed. Alerts have been created to give early warning of potential electricity shortfalls and bring utilities, emergency management officials, and the general public to a state of preparedness. The Contingency Plan has four stages (Florida Reliability Coordinating Council):

- Generating Capacity Advisory - A Generating Capacity Advisory is primarily for information purposes. It starts utility tracking activities, and it initiates inter-utility and inter-agency communication. No action by the public is required. General information may be distributed to consumers to forewarn them of conditions if necessary.
- Generating Capacity Alert - A Generating Capacity Alert starts actions to increase reserves. Available emergency supply options will be explored. When reserves fall

below the size of the largest generating unit in the state, loss of that size unit to an unexpected mechanical failure could lead to blackouts somewhere since insufficient backup is available.

- Generating Capacity Emergency - A Generating Capacity Emergency occurs when blackouts are inevitable somewhere in Florida. Every available means of balancing supply and demand will be exhausted. Rolling blackouts, manually activated by utilities are a last resort to avoid system overload and possible equipment damage. Frequent status reports are provided to agencies and the media. The Division of Emergency Management will consider using the Emergency Broadcast System to inform citizens of events and to direct them to available shelters if conditions warranted. Recognizing the consequences of a loss of electricity, individual utility emergency plans include provisions for special facilities critical to the safety and welfare of citizens.

- System Load Restoration - System Load Restoration is instituted when rolling blackouts have been terminated and power supply is adequate. It is the recovery stage, and efforts are made to provide frequent system status reports.

3.1.3 Societal Hazards

3.1.3.1 Civil Disturbance

As in any other area, Palm Beach County is subject to civil disturbances in the form of riots, mob violence, and a breakdown of law and order in a localized area. Although they can occur at any time, civil disturbances are often preceded by periods of increased tension caused by questionable social and/or political events such as controversial jury trials or law enforcement actions. Police services are responsible for the restoration of law and order in any specific area of the county.

3.1.3.2 Terrorism and Sabotage

Terrorism

The FBI defines terrorism as, “the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof in furtherance of political or societal objectives.” A terrorist incident could involve the use of a Weapon of Mass Destruction (WMD) that would threaten lives, property and environmental resources by using explosives or incendiary devices and/or by contamination with chemical, biological, and/or radiological materials.

It is recognized that the state has many critical and high-profile facilities, high concentrations of population and other potentially attractive venues for terrorist activity that are inherently vulnerable to a variety of terrorist methods. Governmental/political, transportation, commercial, infrastructure, cultural, academic, research, military, athletic, and other activities and facilities constitute ideal targets for terrorist attacks which may cause catastrophic levels of property and environmental damage, injury and loss of life. Furthermore, some extremist groups are known to be present within Florida. Terrorist attacks may take the form of the hazards described in this section when incidents of these types are executed for criminal purposes, such as induced dam or levee failures, the use of hazardous materials to injure or kill, or the use of biological

weapons to create an epidemic. Terrorists have the potential to create disasters which threaten the safety of a large number of citizens.

In the recent years, terrorist acts have become a reality for the nation. Palm Beach County is not immune from acts of terrorism. The 2001 World Trade Center bombing was the largest terrorist attack the United States has ever experienced. After the World Trade Center attack, it was learned that many of the perpetrators resided in and the (terrorists) pilots took flight lessons in Palm Beach County. In addition, Anthrax, which was dispersed via the postal system in late 2001, claimed the lives of five US citizens including one person from Palm Beach County. It was determined that he became infected with the disease at American Media Incorporated (AMI), in Boca Raton, his place of employment. A second employee became infected and survived.

The federal government has recognized that the United States has entered the post-Cold War era. As a result, federal planning guidelines regarding military threats are in transition. However, nuclear weapons continue to be a serious planning concern especially in areas surrounding military installations. The influx of undocumented aliens into South Florida from areas unfriendly to the interest of the United States is monitored by those involved with the emergency management of government.

Computer Accidents and Sabotage

The President's Commission on Critical Infrastructure Protection (PCCIP) recently reported that there is an increasing threat that the U.S. could suffer something similar to an "Electronic Pearl Harbor". Networked information systems present new security challenges in addition to the benefits they offer. Long-term power outages could cause massive computer outages, with severe economic impacts such as loss of sales, credit checking, banking transactions, and the ability to communicate and exchange information and data.

Today, the right command sent over a network to a power generating station's control computer could be just as effective as a backpack full of explosives, and the perpetrator would be harder to identify and apprehend (Rubin, 1998).

With the growth of a computer-literate population, increasing numbers of people possess the skills necessary to attempt such an attack. The resources to conduct a cyber attack are now easily accessible everywhere. A personal computer and an internet service provider anywhere in the world are enough to cause a great deal of harm.

Threats include:

- Human error
- Insider use of authorized access for unauthorized disruptive purposes
- Recreational hackers – with or without hostile intent
- Criminal activity – for financial gain, to steal information or services, organized crime
- Industrial espionage
- Terrorism – including various disruptive operations
- National Intelligence – information warfare, intended disruption of military operations

As the internet becomes more and more important, the loss of its services, whether by accident or intent, becomes a greater hardship for those relying on this form of communication. The outcomes of such activities may take the form of disruption of air traffic controls, train switches,

banking transfers, police investigations, commercial transactions, defense plans, power line controls, and other essential functions. Computer failures could affect emergency communications as well as routing civilian applications, such as telephone service, brokerage transactions, credit card payments, Social Security payments, pharmacy transactions, airline schedules, etc.

3.1.3.3 Immigration Crisis

Florida's location as the nearest United States land mass bordering the Caribbean basin makes it a chosen point of entry for many migrants attempting to enter the country illegally. A major consequence of a mass arrival of illegal aliens could be disruptive to the routine functioning of the impacted community, resulting in significant expenditures that are related to the situation. An example of this threat occurred in 1994, when the state responded to two mass migration incidents. In May 1994, there was an unexpected migration of approximately 100 Haitian refugees, while in August 1994, there was an influx of 700 Cubans. These events are typically preceded by periods of increasing tension abroad, which can be detected and monitored. Enforcement of immigration laws is a federal responsibility. However, it is anticipated that joint jurisdictional support of any operation will be required from the state and local governments.

The Atlantic shore of Palm Beach County is the frequent scene of arrival of undocumented aliens, usually Haitian or Cuban. The county has both the history and potential for the unannounced arrival of a large number of aliens. Until relieved of the responsibility by the state and federal governments, Palm Beach County must be capable of providing mass refugee care to include shelter, food, water, transportation, medical, police protection, and other social services.

3.2 VULNERABILITY ASSESSMENT

Palm Beach County is a diversified county. While all county residents are exposed to the hazards identified in **Table 3.1** to some degree, geographic location and other factors greatly affect individual vulnerabilities and probabilities relating to specific hazards illustrated in **Appendix A** for the county and each jurisdiction. Factors influencing vulnerability include community location, type of construction, demographics, and cultural characteristics. **Table A - 1** summarizes individual community vulnerability within Palm Beach County. **Table A-2** relates the probability of future hazard events for each identified hazard within Palm Beach County. **Appendix B** includes descriptive mitigation initiatives to reduce the impacts of each jurisdiction risks for Palm Beach County and each jurisdiction in reference to the individual hazards identified in **Section 3.1**. A narrative for each identified hazard and its impact on the individual jurisdictions in Palm Beach County is located in **Appendix C**. Additionally, maps will be located in **Appendix C.** These maps will be illustrated by hazard addressing critical facilities having the potential to be effected by hazard. The critical facilities will have a potential dollar loss figure tied to it.

With the assistance of Palm Beach County Division of Emergency Management, the LMS conducted impact analyses to assess the potential for detrimental impacts from all identified natural, technological and societal hazards. Results of these analyses are summarized below. Impacts were categorized into the following groupings: health and safety of the resident population in the affected area; health and safety of incident responders; impacts on the continuity of government and non-government operations; impacts to property, facilities and infrastructure; impacts to the critical community services; impacts to the environment; economic

and financial impacts; impacts on regulatory and contractual obligations; and impacts negatively affecting the county's reputation, image, and/or ability to attract public and commercial interests.

- An impact rating of "Low" for any hazard type means the hazard is not likely to have any measurable or lasting detrimental impact of a particular type and consequences will likely be rectified promptly with locally available resources.
- An impact rating of "Medium" means there will likely be a measurable detrimental impact which may require some time to rectify and may require outside resources and/or assistance.
- An impact rating of "High" means the impact will likely be severe and of longer duration, and require substantial time, resources, and/or outside assistance to rectify. Multiple ratings indicate detrimental impacts might easily vary within the range indicated.

3.2.1 Natural Hazards

3.2.1.1 Hurricanes and Tropical Storms

From 1930 through 1959, a total of 58 hurricanes struck the U.S. Mainland, 25 of which were category 3 or higher (major storms). Between 1960 and 1989, 43 hurricanes struck the U.S. of which only 16 were Category 3 or stronger. Most hurricane experts feel we are entering a period of increased hurricane formation similar to the levels seen in the 1930s and 1940s. Current hurricane risk calculations are complicated by climatic factors suggesting the potential for even greater hurricane frequency and severity in all of the world's hurricane spawning grounds. Since 1995, there have been 33 Atlantic hurricanes, 10 of which occurred in 1998 alone. Global warming may cause changes in storm frequency and the precipitation rates associated with storms. A modest 0.9 degree Fahrenheit (0.5 degree centigrade) increase in the mean global temperature will add 20 days to the annual hurricane season, and increase the chances of a storm making landfall on the U.S. mainland by 33%. The warmer ocean surface will also allow storms to increase in intensity, survive in higher latitudes, and develop storm tracts that could shift farther north, producing more U.S. landfalls.

Currently an average of 1.6 hurricanes strike the U.S. every year. Severe (Category 4 or 5 on the Saffir-Simpson scale) hurricanes strike the U.S. on the average of one every 5.75 years. Annually, hurricanes are estimated to cause approximately $1.2 billion in damages. The proximity of dense population to the Atlantic Ocean, as well as the generally low coastal elevations, significantly increases the county's vulnerability. The potential for property damage and human casualties in Palm Beach County has increased over the last several decades primarily because of the rapid growth this county has experienced since 1970, particularly along the vulnerable coastline areas.

Hurricane damage is caused by two factors:

- High winds; and
- Storm surge (discussed under Flooding)

Generally, it is the wind that produces most of the property damage associated with hurricanes, while the greatest threat to life is from flooding and storm surge. Although hurricane winds can exert tremendous pressure against a structure, a large percentage of hurricane damage is caused not by wind, but from flying debris. Tree limbs, signs and sign posts, roof tiles, metal

siding, and other lose objects can become airborne missiles that penetrate the outer shells of buildings, destroying their structural integrity and allowing the hurricane winds to act against interior walls not designed to withstand such forces. Once a structure's integrity is breached, the driving rains associated with hurricanes can enter the structure and completely destroy its contents.

Hurricane winds are unique in several ways:

- They are more turbulent than winds in most other type storms;
- They are sustained for a longer period of time (several hours) than any other type of atmospheric disturbance;
- They change slowly in direction, thus they are able to seek out the most critical angle of attack on a given structure; and
- They generate large quantities of flying debris as the built environment is progressively damaged, thus amplifying their destructive power.

In hurricanes, gusts of wind can be expected to exceed the sustained wind velocity by 25 to 50 percent. This means a hurricane with sustained winds of 150 mph will have wind gusts exceeding 200 mph. The wind's pressure against a fixed structure increases with the square of the velocity. For example, a 100 mph wind will exert a pressure of approximately 40 lbs per square foot on a flat surface, while a 190 mph wind will exert a force of 122 lbs per square foot on that same structure. In terms of a four by eight foot sheet of plywood nailed over a window, there would be 1,280 lbs of pressure against this sheet in a 100 mph wind, and 3,904 lbs or 1.95 tons of pressure against this sheet in a 190 mph wind.

The external and internal pressures generated against a structure vary greatly with increases in elevation, shapes of buildings, openings in the structures, and the surrounding buildings and terrain. Buildings at ground level experience some reductions in wind forces simply because of the drag exerted by the ground against the lowest levels of the air column. High rise buildings, particularly those located along the beach front, will receive the full strength of a hurricane's wind on their upper stories. Recent studies estimate that wind speed increases by approximately 37 percent just 15 feet above ground level.

The wind stream generates uplift as it divides and flows around a structure. The stream following the longest path around a building, generally the path over the roof, speeds up to rejoin the wind streams following shorter paths, generally around the walls. This is the same phenomena that generates uplift on an aircraft's wing. The roof, in effect, becomes an airfoil that is attempting to take off from the rest of the building. Roof vortexes generally concentrate the wind's uplift force at the corners of a roof. These key points can experience uplift forces two to five times greater than those exerted on other parts of the roof.

Once the envelope of the building has been breached through the loss of a window, door, or roof damage, wind pressure on internal surfaces becomes a critical factor. Openings may cause pressurizing or depressurizing of a building. Pressurizing pushes the walls out, while depressurizing will pull the walls in. Internal pressure coupled with external suction adds to the withdrawal force on sheathing fasteners. Damages from internal pressure fluctuations may range from blowouts of windows and doors to total building collapse due to structural failure.

During Andrew, catastrophic failure of one and two-story wood-frame buildings in residential areas was observed more than catastrophic failures in any other type of building. Single family residential construction is particularly vulnerable because less engineering oversight is applied

to its design and construction. As opposed to hospitals and public buildings which are considered fully engineered, and office and industrial buildings which are considered "marginally engineered," residential construction is considered "non-engineered." Historically, the bulk of wind damage experienced nationwide has occurred to residential construction. Fully engineered construction usually performs well in high winds due to the attention given to connections and load paths.

Hurricane winds generate massive quantities of debris, which can easily exceed a community's entire solid waste capacity by three times or more. Debris removal is an integral first step toward recovery, and as such must be a critical concern of all those tasked with emergency management and the restoration of community services. The TAOS model predicts the following quantities of debris for Palm Beach County given the following hurricane strengths:

Tropical Storm	156,142 cubic yards/acre
Category 1 Hurricane	1,049,571 cubic yards/acre
Category 2 Hurricane	3,183,532 cubic yards/acre
Category 3 Hurricane	7,431,401 cubic yards/acre
Category 4 Hurricane	16,389,149 cubic yards/acre
Category 5 Hurricane	44,874,888 cubic yards / acre

Both the Town of Palm Beach and City of West Palm Beach are old, historical communities on Palm Beach County's east coast. Their age alone makes them particularly vulnerable to hurricane damage. Both cities have old, historically significant structures whose loss would represent the loss of irreplaceable cultural resources. The age and construction type of much of the housing in West Palm Beach and to a lesser extent in many of the other coastal communities, suggests these communities would be hit very hard by a major storm.

3.2.1.2 Flooding

Flooding in Palm Beach County results from one or a combination of both of the following meteorological events:

- Tidal surge associated with northeasters, hurricanes, and tropical storms; and
- Overflow from streams and swamps associated with rain runoff.

Major rainfall events occur in association with hurricanes, tropical storms, and thunderstorms associated with frontal systems.

When these types of intense rainfall events occur, streams and drainage ditches tend to reach peak flood flow concurrently with tidal water conditions associated with coastal storm surge. This greatly increases the probability of flooding in the low-lying areas of the coastal zone. Areas along the Palm Beach County coast are particularly susceptible to flooding under these conditions. The most flood prone areas in the eastern portion of the county feature

poorly drained soils, a high water table, and relatively flat terrain, all of which contribute to their flooding problems. Flat, swampy terrain and heavily wooded areas in the western part of Palm Beach County aggravate flood problems by preventing rapid drainage in some areas.

In response to mounting losses from flooding nationwide, the United States Congress initiated the National Flood Insurance Program in 1968. The program is administered through FEMA. Under this program, FEMA produces FIRM (Flood Insurance Rate Map) maps, which show areas subject to various levels of flooding under different conditions. This flood risk information is based on historic, meteorologic, hydrologic, and hydraulic data, as well as open-space conditions, flood control works, and development.

In **Appendix C**, Flood Section**,** presents a generalized picture of the flood prone areas in Palm Beach County based on the 1993 version of the FIRM maps. Note that NFIP flood zones B and C do not appear in the legend, as they are not on the Palm Beach County FIRM map.

In addition to the FIRM maps there are two numerical models, which predict the effects of storm surge in Palm Beach County. The older model, developed by the National Oceanic and Atmospheric Administration, is called the Sea, Lake and Overland Surges from Hurricanes (SLOSH) model. In **Appendix C**, Flood Section, illustrates the areas of Palm Beach County vulnerable to this type of flooding.

Recently, the State of Florida acquired another model for predicting hurricane storm surge as well as wind and property damage. This model, know as The Arbiter Of Storms (TAOS) model, predicts storm surge height and wind field intensity for Category 1 through Category 5 hurricanes. In **Appendix C**, Flood Section, illustrates the areas of Palm Beach County subject to flooding during a Category 5 Hurricane. It is important to remember that the TAOS model projections are based on a Maximum of Maximums (MOM) or absolute worst case scenario. For this analysis we have considered the TAOS model projections as reflecting total, worst case exposure for Palm Beach County.

3.2.1.3 Severe Thunderstorm/Lightning

Vulnerability to severe thunderstorms and lightning is high in Palm Beach County, but many of the jurisdictions and populations centers shown in **Appendix A Table A-1** have only moderate vulnerabilities relative to these hazards. This variation in relative levels of vulnerability is again due primarily to construction practices and community characteristics. Working communities have a higher vulnerability to economic impacts from lightning than residential or retirement communities. All other factors being equal, residential and retirement communities have a historically higher vulnerability in terms of lightning fatalities.

3.2.1.4 Wildfire/Urban Interface Zone

Less urbanized communities and areas within the county are more vulnerable to wildfires than the more developed communities. Large areas in the western part of the county and many isolated unincorporated pockets of residential development are quite vulnerable to wildfire in Palm Beach County. The southern and western portion of the Village of Wellington, the unincorporated areas west of Boca Raton, South Bay, Pahokee, and Belle Glade, and virtually all of Palm Beach County's unincorporated areas have a high vulnerability to wildfire during the dry season each year. The problems in the Village of Wellington, west Boca Raton area, and in the various unincorporated pockets of development such as Jupiter Farms, Loxahatchee, and the Lion Country Safari area arise from the fact that these areas have an extensive canopy of

slash pine (*Pinus elliotii*) and sand pines (*Pinus clausa*), and numerous undeveloped lots interspersed with residences.

Upland pine communities in South Florida are adapted for periodic episodes of fire, and they burn very easily. They also generate large quantities of flammable leaf litter and other combustible by-products, which catch fire easily and generate a very hot, if short lived fire. Clearing of vacant lots, periodic removal of accumulated leaf litter, maintained fire breaks, and controlled burns in the undeveloped or rangeland areas of the county are the best mitigative measures that can be applied for this hazard.

3.2.1.5 Muck Fire

Muck fires have never occurred in Palm Beach County. The only areas where this hazard might produce impacts are the western portions of the county. At the present time, muck fires are not considered a significant hazard anywhere other than the Pahokee, Belle Glade, and South Bay areas in the western county

3.2.1.6 Tornado

Historical data indicates the frequency of tornadoes in Palm Beach County is relatively low. However, the vulnerability does exist as proven in August of 2003 when Palm Beach County was affected by a tornado. Some individual communities have a higher vulnerability to this hazard due to the type of construction or numbers of mobile homes (manufactured housing units) within their boundaries.

3.2.1.7 Extreme Temperatures

Temperature extremes, both freezes and periods of excessive heat, impact communities with a larger senior population to a greater extent than those with younger populations. Inland communities away from the moderating influence of the ocean or the estuary are more vulnerable to temperature extremes, as are areas with significant agricultural assets.

The increase in temperature across the U.S. in this century is slightly smaller, but of comparable magnitude to the increase of temperature that has characterized the world as a whole. The increase in minimum temperature and the related increase in area affected by much above normal minimum temperatures are also found in many other countries of the northern hemisphere. Worldwide precipitation over land has changed little through the twentieth century; increases noted in high latitudes have been balanced by low-latitude decreases. By comparison, the change in precipitation in the U.S. is still relatively moderate compared to some of the increases and decreases at other latitudes. Decreases in the day-to-day differences of temperature observed in the U.S. are also apparent in China and Russia, the only other large countries analyzed as of this date. The persistent increase in the proportion of precipitation derived from extremely heavy precipitation has not been detected in these other countries.

A Climate Extremes Index, defined by an aggregate set of conventional climate extremes indicators, supports the notion that the climate of the U.S. has become more extreme in recent decades, yet the magnitude and persistence of the changes are not now large enough to conclude that the climate has systematically changed to a more extreme state. Similarly, a U.S. Greenhouse Climate Response Index, composed of indicators that measure the changes that are expected to follow increased emissions of greenhouse gases, reflects in recent years the very changes that are predicted. Still, the rate of change of the GCRI, as with the CEI, is not

large enough to unequivocally reject the possibility that the increase in the GCRI may have resulted from other factors, including natural climate variability, although statistically this is but a 5 to 10% chance. Both indices increased rather abruptly during the 1970s, at a time of major circulation changes over the Pacific Ocean and North America. There is little doubt that the increase in the indices is at least partially related to these circulation variations, although the role of increased anthropogenic greenhouse gas concentrations in such circulation variations is poorly known.

Since the indices are influenced by natural changes and variations that can either add to or subtract from any underlying long-term anthropogenic-induced change it will be important to carefully follow their behavior over the next decade to see if they sustain their incipient trends or return to previous levels. Such an effort is critical for a better understanding of climate itself, how it changes, and how these changes can affect our own lives and well being.

3.2.1.8 Coastal and Beach Erosion

Palm Beach County's vulnerability to coastal and beach erosion is moderate along all of its coastline. The most significant areas of beach erosion are the areas south of the stabilized inlets where the natural flow of laterally transported sand has been artificially interrupted. Many areas in Palm Beach County have been the subject of major beach re-nourishment projects sponsored jointly by the county and Army Corps of Engineers. Inland communities report some erosion problems along major canals and around water control structures.

3.2.1.9 Agricultural Pest and Disease

Agricultural pests and disease are a more significant hazard in those areas of the county where agriculture is a more significant element in the economic base. The western portion of Palm Beach County is a major ranching and farming area and there are numerous nurseries and smaller agriculture related businesses located throughout the county.

3.2.1.10 Drought

Palm Beach County overall has a moderate vulnerability to the impacts from drought due to the county's large agricultural land use in the west and extensive urbanization in the east. Overall, the county has a narrow reserve of potable water and this could become a significant problem during a long-term drought. The western area of the county is most vulnerable to the impacts of drought because this area is extensively involved in farming and ranching. The urbanized communities along the county's coast are less vulnerable economically due to their location and non-agricultural economic base. Potential impacts to Palm Beach County's potable water supply by saltwater intrusion during drought conditions are generally low, with the exception of the City of West Palm Beach which draws its water from surface supplies.

3.2.1.11 Epidemic

Florida is more vulnerable than many other states to possible outbreaks of infectious diseases due to the large number of international and U.S. tourists it attracts. In addition, vulnerability to disease hazards has increased by the number of illegal aliens reaching U.S. shores. Palm Beach County's vulnerability to epidemic outbreaks, while higher than some other Florida counties due to its large immigrant population is still considered only moderate. Medical facilities are adequate for current needs, but would be stressed if forced to deal with a major disease outbreak.

3.2.1.12 Seismic Hazards

Sink Holes and Dam/Levee Failures

There are areas in Palm Beach County where canal bank failures could cause or exacerbate flooding during heavy rain events or storms. This problem is, however, more related to soil erosion than to actual levee failure. There has never been any seismic activity, soil failures, or sinkhole activity in Palm Beach County. While these hazards may exist, county vulnerability to them at this time must be considered very low.

Palm Beach County does have a major vulnerability to levee failure around the eastern boundary of Lake Okeechobee. Extensive dyking of Lake Okeechobee has taken place since the hurricane of 1928 when about 2,500 people were killed from lake surge in western Palm Beach County. Palm Beach County has the dubious distinction of having had the second highest number of fatalities (following Galveston, Texas) of any county in the United States. The U.S. Army Corps of Engineers maintains the levees around Lake Okeechobee and they are considered to be sound. A levee failure with today's population would be a catastrophic disaster for Palm Beach County.

Tsunamis

There have been no recorded tsunamis to have ever affected Palm Beach County. However, scientists have been studying La Palma Island in the Canaries as a possible site where a tsunami could originate if a massive landslide were to occur. Research published in 2001 by two prominent geologists (Ward & Day) created a major debate and concern over whether a predicted volcanic collapse in the Canary Islands could generate a mega tsunami, which could traverse the Atlantic Ocean at jet aircraft speeds (8 to 9 hours) and devastate the eastern coast of the U.S., including Florida. It was postulated that the wave, at impact on the Florida coast, could be on the order of 50 meters high and cause damage inland as far as 20 km. This mega tsunami would cause unprecedented destruction and loss of life.

Subsequently, more comprehensive and rigorous research published by several scientists of the Tsunami Society has taken exception with the original research. The original research, they argue, was based on several erroneous assumptions regarding a structural weakness observed in the western flank of the Cumbre Vieja volcano on island of La Palma, the probability of a gravitation collapse of a massive land mass of the ocean bottom, and the magnitude and traveling distance of a wave (s) that might be generated should such a collapse occur.

The mega tsunami was postulated to occur sometime in the next 1500 years. The weight of scientific evidence suggests there is no discernable tsunami threat to the coast of Florida as a result of geological activity in the Canary Islands. The probability of a tsunami is low.

3.2.2 Technological Hazards

3.2.2.1 Hazardous Materials Accident

A community's vulnerability to hazardous materials accidents depends on three factors. These are:

- The major transportation routes that pass through the community;
- The hazardous material generators located in or near the community; and
- The resources in terms of people and property that are in an area of possible impact from a hazardous materials release.

Overall, unincorporated Palm Beach County has a low vulnerability to impacts from hazardous materials releases. There are relatively few major generators within the county and those that do exist are generally away from major population centers.

Specific areas with higher vulnerability for hazardous materials accidents are along the transportation network (both highway and rail) that pass through the county. All the jurisdictions along the eastern sand ridge (Boca Raton, Delray Beach, Boynton Beach, Hypoluxo, Lantana, Lake Worth, West Palm Beach, Riviera Beach, Lake Park, Palm Beach Gardens, Jupiter, and Tequesta) are extremely vulnerable to toxic material spills and releases from transportation system accidents, primarily rail accidents. The Florida East Coast Railroad runs through all these areas and toxic material spills have occurred along the rail line. Given the right set of circumstances, such releases could produce significant detrimental effects on life and property in these communities.

3.2.2.2 Radiological Accidents (Including Nuclear Power Plant Accidents)

The Florida Power and Light St. Lucie Nuclear Power plant is located on south Hutchinson Island in St. Lucie County; the northern part of Palm Beach County falls within the 50-mile radius IPZ for that plant. This means that virtually all Palm Beach County is vulnerable to a nuclear power plant accident to some degree. Fortunately, the frequency with which nuclear power plant accidents occur is very low, and the overall risk to the citizens of Palm Beach County is therefore considered low.

Nuclear emergency is perhaps the single hazard facing Palm Beach County, which has received massive emergency management attention at all levels of government. Emergency management planning and regulation relative to nuclear power plant accidents exists at the federal, state, local, and corporate levels. Drills are held routinely and extensive documentation is required by the Nuclear Regulatory Commission as well as several other federal agencies. Contingency planning for nuclear accidents at the plant itself appears to be well in hand. Of greater risk to the citizens of Palm Beach County is the transport of fissionable material to and from the plant. Such materials transfers are handled with a great deal of care and there has never been a significant accident during any such transfer. Again, while Palm Beach County's vulnerability to such accidents is high, the risk that this hazard will produce an impact within the community appears to be low. Some risks to county include:

- Loss of life or potential physical injury (including long-term effects such as cancer).
- Loss of property (displacement from homes).
- Palm Beach County is within the 50 mile Ingestion Pathway Zone making contamination of food supplies and drinking water a possibility.

- Exaggerated media reporting could lead to heightened public alarm. Impacts to tourism industry are possible.

In the event of an accidental release of radioactive materials from the St. Lucie Nuclear Plant, evacuation areas would depend on several metrological factors such as wind direction and wind speed. According to the 2000 Census data, there are approximately 200,000 people living within ten miles of the power plant. If an accident at the plant took place during tourist season, Palm Beach County could expect half this population to evacuate into Palm Beach County (approximately 110,000 evacuees). Palm Beach County must be prepared to shelter 10 percent (11,000 people) of the evacuating population. All evacuees will be sheltered in Palm Beach, Indian River, and/or Brevard Counties. Currently, there are 19 shelters of which 18 are schools.

There are several safety design measures at the plant and stringent federal safety standards govern plant operations (e.g. plants have protective barriers and are designed to withstand aircraft attack, tornados, severe accidents and earthquakes). It is most likely that an accident would slowly progress from one stage of emergency classification to the next. A "fast breaker" accident is very unlikely, but the plant can shut down operations within 2 seconds if needed. Most likely, an accident would slowly progress providing time to warn the public and implement protective measures. In the case of a radioactive release, Florida Power and Light and the American Nuclear Insurers organization would reimburse evacuees for damage or re-location.

3.2.2.3 Communications System Failure

Communication failures have a greater potential to produce adverse economic impacts in business-based rather than retirement or residential communities. On the other hand, communication system failures in residential and retirement communities may put more human lives at risk. Palm Beach County's vulnerability to communication system failures is generally considered moderate. Basically, Palm Beach County's vulnerability to this hazard is no greater or less than most other Florida coastal counties.

3.2.2.4 Transportation System Accidents

Palm Beach International Airport is a major commercial air transportation hub, with extensive commercial passenger and freight business as well as a significant amount of private or general aviation activity as well. The airport is located directly to the south and west of the City of West Palm Beach and the runway approaches pass directly over both the Town of Palm Beach and the City of West Palm Beach. Aviation is an important element of the economy in Palm Beach County, and this activity raises the county's vulnerability to aviation associated accidents.

Vulnerability to transportation system accidents is also associated with the highway and rail systems that run through the county. Individual community and population center vulnerabilities to this hazard are entirely dependent upon location. Again, the communities built on the eastern sand ridge of the county are most vulnerable. Major transportation hubs, rail yards, trucking centers, and the Port of Palm Beach all raise these communities' vulnerabilities to transportation system accidents and breakdowns. Transportation accidents have occasioned blockages on the major highways throughout the county. Due to their locations along the rail line, the eastern cities have higher vulnerabilities to rail system accidents. The Town of Palm Beach and the City of West Palm Beach are also more vulnerable to plane crashes due to their location relative to the Palm Beach International Airport. The central, unincorporated portion of the county has a higher vulnerability to major highway accidents due to the presence of Interstate 95 and the Florida Turnpike.

3.2.2.5 Wellfield Contamination

Wellfield contamination has not been a major problem for most of Palm Beach County. There is some potential exposure to this hazard in the eastern portion of the county, but overall the vulnerability to this hazard is considered low at this time.

3.2.2.6 Power Failure

Power failures have the same potential impacts in all Palm Beach County communities. The vulnerabilities of all communities to power failures is considered moderate. The power grid throughout Palm Beach County is diversified and there is no single choke point or distribution node whose failure would disrupt power distribution to the entire community.

3.2.3 Societal Hazards

3.2.3.1 Civil Disturbance

The overall potential for civil disturbance in Palm Beach County is considered moderate. The Cities of West Palm Beach, Delray Beach, Boynton Beach, and Rivera Beach are considered to have relatively high vulnerability to this hazard. There has been significant civil unrest in certain areas of these cities in the past and a significant potential for such unrest remains. Recently (within the last 3 years), the potential for civil disturbance appears to have been reduced as a result of community based police activities and the generally overall strong national economy.

3.2.3.2 Terrorism and Sabotage

The possibility for terrorism and sabotage in Palm Beach County does exist, but the county's vulnerability to this hazard is low. The City of West Palm Beach has a slightly higher vulnerability to terrorism since it is the center of government and also by the role played by aviation in the local economy, but this vulnerability is still considered only moderate. The Town of Palm Beach, as well as many other wealthy enclaves within Palm Beach County have a slightly higher vulnerability to celebrity terrorism since so many well known and wealthy personalities make their residence there. While this vulnerability exists, it is considered to be no greater than that faced by many other communities around the country where the rich and famous live.

The warm temperatures, onshore winds, high rate of sunshine (UV exposure), and rainfall in Palm Beach County make this area a less favorable target for biological or chemical terrorism than many other areas of the United States. The population here is dispersed when compared to major cities in the northeastern U.S., and the transportation system infrastructure is highly dependent upon individual vehicles. Both of these features make Palm Beach County a less desirable target for transportation system or conventional type (bomb related) terrorist acts.

3.2.3.3 Immigration Crisis

Reviewing the data on past illegal immigration and mass population movements, such as the Haitian influx and Cuban raft incidents of the 1980s, indicates that illegal immigration has never reached a crisis state for the local authorities in Palm Beach County. Palm Beach County's vulnerability to this hazard is moderate, however, due to demographic features. The cities of

West Palm Beach, Delray Beach, Boynton Beach, Rivera Beach, South Bay, Pahokee, and Belle Glade all have a slightly higher vulnerability to illegal immigration impacts due their larger populations of Latin American and Caribbean immigrants.

3.2.4 Vulnerability of Critical Facilities

In **Appendix C**, maps demonstrate the vulnerability of each hazard in relation to the county and each jurisdiction's location and critical facilities and/or infrastructure. Structures have been identified for each hazard with jurisdictional boundaries. An estimated dollar figure in relation to potential dollar losses has been identified and summarized in a narrative for each identified hazard by jurisdiction.

Palm Beach County determined a criticality based on the relative importance of its various assets for the delivery of vital services, the protection of special populations, and other important functions. The types of critical facilities and infrastructure identified within these risk assessment maps are: schools, police stations, fire stations, specific government buildings, nursing homes, assisted living facilities, hospitals, shelters, Herbert Hoover Dike, Turnpike, I-95, water treatment facilities and airports. These facilities can be located on the risk assessment maps and a potential dollar loss will be correlated in the charts broken down by municipality and unincorporated county. The estimated costs are based upon information from the county Auditor's Office. The dollar figures specific to each hazard by municipality or unincorporated area express the potential human and economic impacts within Palm Beach County.

3.3 RISK ASSESSMENT

In order to effectively plan hazard mitigation projects and allocate scarce financial resources, a community's vulnerability to a specific hazard must be coupled with other critical factors to perform a risk assessment.

Risk, or the probability of loss, depends on three elements:

- Frequency – How frequently does a known hazard produce an impact within the community?
- Vulnerability – How vulnerable is a community to the impacts produced by a known hazard?
- Exposure – What is the community's exposure in terms of life and property to the impacts produced by a specific hazard?

Once these three factors are established, the risk level faced by a community with regard to any specific hazard can be calculated using the Risk Triangle approach (Crichton, 1999).

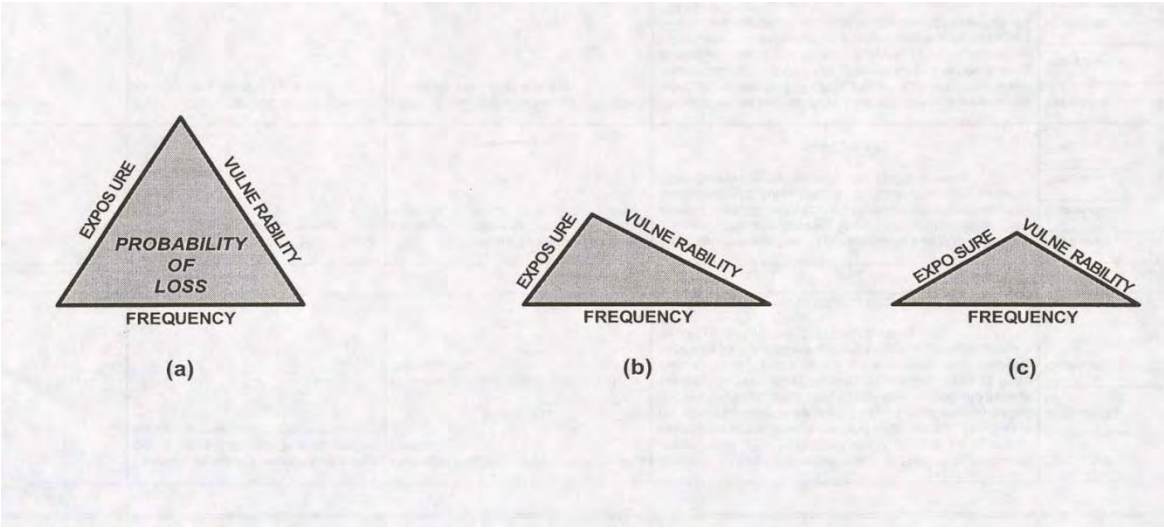
In this approach, these three factors become the sides of a triangle, and the risk or probability of loss is represented by the triangle's area (**Figure 3.1a**). The larger the triangle's area, the higher the community's risk with respect to a given hazard. If a community wishes to reduce its potential for loss or risk of impacts from any given hazard, it can attack the problem by reducing any one of the three elements forming the sides of this triangle; the frequency of a hazard's occurrence, the vulnerability of the community, or the exposure of the community.

For example, if a community wishes to reduce its exposure to hurricanes, it could move off of the barrier islands. This actually happened in the 1870s when an entire community on the North Carolina barrier islands moved to the mainland after suffering two devastating hurricanes in three years. By moving out of harm's way a community drastically reduces its exposure and therefore it's potential for loss from a given natural hazard (**Figure 3.1b**).

In today's world, the potential to relocate an entire community off the barrier islands is, to say the least, remote. A community may, however, reduce its vulnerability to hurricanes by strengthening its buildings. If buildings are hardened, vulnerability is reduced and there is a corresponding reduction in a community's probability of loss (**Figure 3.1c**).

In terms of natural hazards, there is very little, if anything that can be done to change the frequency with which they produce impacts in a community. Mitigation planning relative to those hazards must therefore focus on reducing the community's vulnerability or exposure. In terms of technological and societal hazards, the most cost-effective type of mitigation is to limit or reduce the frequency with which such hazards actually occur. **Table A-4** summarizes Palm Beach County's risk or potential for loss relative to each of the hazards identified. In addition, **Appendix C** will include a risk assessment by jurisdiction. Tables in **Appendix C** will include all 38 jurisdictions with each hazard identified. The jurisdictional risk assessment will compare each jurisdiction to the overall strategy. Then, the risk assessments will be illustrated by means of maps located in **Appendix C** by hazard. This is to give a clear image of potential risk throughout Palm Beach County hazard specific with potential dollar losses estimated tied to assessed property values. This assessment will be linked directly to **Appendix D** illustrating mitigation actions being addressed in the county and jurisdictional comprehensive plans. The overall strategy is to mitigate to reduce damage of a potential hazard.

Figure 3.1 a, b, c Risk Triangle



SECTION 3A: VULNERABILITY OF CRITICAL FACILITIES

This subsection assesses the vulnerability of critical facilities by jurisdiction in terms of the dollar values of property at risk from key hazards. It addresses, in part, the following FEMA requirement:

Requirement §201.6(c)(2)(ii)(A): *The plan* ***should*** *describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area … .*

Numbers and types of existing residential, commercial and critical service facilities and infrastructure are described in considerable detail in **Special Appendix II**: The Palm Beach County Hazard Environment. Subsection 3B summarizes the number and value of residential and commercial properties, by jurisdiction, at risk from select hazards.

With regard to future facilities, the following should be considered:

- Developable coastal areas of the County in are substantially built out. Future development is likely to be replacement and upgrading of existing facilities.
- Development in the Coastal High Area is strictly limited and managed by local ordinances and codes which tend to meet or exceed those recommended of the State.
- Future growth throughout the county is guided by the managed growth tiers described in Land Use section of Special Appendix II which consider hazard vulnerability.
- Virtually the whole county is potentially vulnerable to isolated flooding during excessive rain events, even areas lying outside Special Flood Hazard Areas. Repetitive flood loss properties are widely scattered, not clustered as the county has no riverines or significant elevation variations to speak of.
- All new residential, commercial and critical service facilities will be built to meet or exceed South Florida Building hurricane standards. Several local developers are now building Category 5 type structures.
- Wildfire mitigation practices are being promoted for development in the wildland-urban interface areas.

Any estimates of future building in Palm Beach County have been rendered virtually useless by the recent general decline in relocations into South Florida and the nation-wide economic downturn which brought new construction to a standstill starting in 2008. Quantitative and evaluative analyses of the vulnerability of future residential, commercial and critical services structures is considered to best be tabled until these factors stabilize or are reversed.

The following pages provide assessments of the dollar values of existing critical facilities at risk, by hazard, by jurisdiction, based on database information from the Property Appraisers Office.

VALUE OF CRITICAL FACILITIES AT RISK FROM COUNTY-WIDE OR LOCALIZED HAZARDS BY JURISDICTION

JURISDICTION	FACILITY	TYPE	EST. VALUE
ATLANTIS	PALM BEACH COUNTY FIRE RESCUE STATION #43	FIRE STATION	$766,399.00
ATLANTIS	JFK MEDICAL CENTER	HOSPITAL	$67,884,466.00
ATLANTIS	ATLANTIS PD	LAW ENFORCEMENT	$1,301,044.00
BELLE GLADE	BELLE GLADE STATE AIRPORT	AIRPORT	$355,511.00
BELLE GLADE	PALM BEACH COUNTY FIRE RESCUE STATION #73	FIRE STATION	$2,706,958.00
BELLE GLADE	GLADES GENERAL	HOSPITAL	$6,786,526.00
BELLE GLADE	BELLE GLADE	SCHOOL	$8,786,840.00
BELLE GLADE	GLADE VIEW	SCHOOL	$3,711,299.00
BELLE GLADE	GOVE	SCHOOL	$4,321,950.00
BELLE GLADE	PIONEER PARK	SCHOOL	$25,505,038.00
BELLE GLADE	GLADES CENTRAL	SCHOOL/SHELTER	$25,505,038.00
BELLE GLADE	LAKE SHORE MIDDLE	SCHOOL/SHELTER	$16,529,863.00
BELLE GLADE	BELLE GLADE WATER TREATMENT	UTILITY	$574,741.00
BOCA RATON	ATRIUM AT BOCA RATON, THE	ADULT LIVING	$6,763,831.00
BOCA RATON	OAKBRIDGE TERRACE AL RESIDENCE AT ST ANDREWS ESTATES	ADULT LIVING	$25,640,912.00
BOCA RATON	BOCA RATON AIRPORT	AIRPORT	$119,336,710.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #1	FIRE STATION	$2,884,268.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #2	FIRE STATION	$51,700.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #3	FIRE STATION	$8,974,393.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #4	FIRE STATION	$714,342.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #5	FIRE STATION	$1,376,163.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #6	FIRE STATION	$568,590.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #7	FIRE STATION	$1,180,635.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #8	FIRE STATION	$2,005,559.00
BOCA RATON	BOCA RATON COMMUNITY	HOSPITAL	$49,772,820.00
BOCA RATON	BOCA RATON PD	LAW ENFORCEMENT	$9,083,891.00
BOCA RATON	AVANTE AT BOCA RATON	NURSING HOME	$5,183,621.00
BOCA RATON	BOCA RATON REHABILITATION CENTER	NURSING HOME	$3,710,077.00
BOCA RATON	FOUNTAINS NURSING HOME	NURSING HOME	$1,216,587.00
BOCA RATON	MANORCARE HEALTH SERVICES	NURSING HOME	$5,960,576.00
BOCA RATON	REGENTS PARK NURSING & REHABILITATION CENTER	NURSING HOME	$7,063,933.00
BOCA RATON	WILLOWBROOKE COURT AT ST. ANDREWS	NURSING HOME	$25,023,255.00
BOCA RATON	ADDISON MIZNER	SCHOOL	$121,260.00
BOCA RATON	BOCA RATON ELEMENTARY	SCHOOL	$7,185,808.00

BOCA RATON	BOCA RATON MIDDLE	SCHOOL	$16,985,529.00
BOCA RATON	CALUSA	SCHOOL	$6,339,251.00
BOCA RATON	DON ESTRIDGE	SCHOOL	$31,473,932.00
BOCA RATON	J.C. MITCHELL	SCHOOL	$16,298,950.00
BOCA RATON	OMNI	SCHOOL	$14,748,963.00
BOCA RATON	SPANISH RIVER	SCHOOL	$2,936,772.00
BOCA RATON	VERDE	SCHOOL	$6,696,522.00
BOCA RATON	BOCA RATON HIGH	SCHOOL/SHELTER	NA
BOCA RATON	BOCA RATON WATER TREATMENT	UTILITY	$28,818,078.00
BOCA RATON	HIGHLAND BEACH WATER TREATMENT	UTILITY	$1,636,951.00
BOYNTON BEACH	A NEW BEGINING ASSISTED LIVING, LLC	ADULT LIVING	$231,432.00
BOYNTON BEACH	BARRINGTON TERRACE OF BOYNTON BEACH	ADULT LIVING	$6,958,668.00
BOYNTON BEACH	BOYNTON BEACH ADULT LIVING	ADULT LIVING	$3,327,446.00
BOYNTON BEACH	DOREEN'S ASSISTED LIVING HOME	ADULT LIVING	$255,801.00
BOYNTON BEACH	GARDENS AT BOYNTON VILLAGE	ADULT LIVING	$5,903,468.00
BOYNTON BEACH	HOMEWOOD RESIDENCE AT BOYNTON BEACH	ADULT LIVING	$6,225,370.00
BOYNTON BEACH	PARKSIDE INN	ADULT LIVING	$909,097.00
BOYNTON BEACH	POINTE AT NEWPORT PLACE, THE	ADULT LIVING	$4,581,221.00
BOYNTON BEACH	RUSTIC RETREAT RETIREMENT HOME	ADULT LIVING	$680,620.00
BOYNTON BEACH	SIMPSON ADULT CARE FACILITY	ADULT LIVING	$133,776.00
BOYNTON BEACH	SUNRISE ADULT CARE II	ADULT LIVING	$215,816.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$11,791,682.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$587,189.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$1,813,965.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #4	FIRE STATION	$1,794,313.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #5	FIRE STATION	$2,378,370.00
BOYNTON BEACH	BETHESDA MEMORIAL	HOSPITAL	$74,408,025.00
BOYNTON BEACH	BOYNTON BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$11,791,682.00
BOYNTON BEACH	BARRINGTON TERRACE OF BOYNTON BEACH	NURSING HOME	$6,958,668.00
BOYNTON BEACH	BOULEVARD MANOR NURSING AND REHAB CENTER	NURSING HOME	$4,107,141.00
BOYNTON BEACH	HAMLIN PLACE	NURSING HOME	$3,627,559.00
BOYNTON BEACH	HEARTLAND HEALTH CARE CENTER - BOYNTON BEACH	NURSING HOME	$3,578,009.00
BOYNTON BEACH	MANORCARE HEALTH SERVICES BOYNTON BEACH	NURSING HOME	$5,972,114.00
BOYNTON BEACH	CITRUS COVE	SCHOOL	$6,004,573.00
BOYNTON BEACH	CONGRESS	SCHOOL	$10,244,805.00
BOYNTON BEACH	CROSSPOINTE	SCHOOL	$11,730,159.00
BOYNTON BEACH	FOREST PARK	SCHOOL	$5,340,559.00
BOYNTON BEACH	FREEDOM SHORES	SCHOOL	$10,520,458.00
BOYNTON BEACH	GALAXY	SCHOOL	$6,087,229.00
BOYNTON BEACH	POINCIANA	SCHOOL	$412,131.00

BOYNTON BEACH	ROLLING GREEN	SCHOOL	$11,496,893.00
BOYNTON BEACH	BOYNTON BEACH	SCHOOL/SHELTER	$8,188,679.00
BOYNTON BEACH	BOYNTON BEACH EAST WATER TREATMENT	UTILITY	$1,173,430.00
DELRAY BEACH	ABBEY DELRAY HEALTH CENTER	ADULT LIVING	$29,613,503.00
DELRAY BEACH	ASHLEY PLACE	ADULT LIVING	$239,202.00
DELRAY BEACH	SOUTH COUNTY MENTAL HEALTH CENTER, INC.	ADULT LIVING	$7,109,435.00
DELRAY BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$2,607,290.00
DELRAY BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$2,989,518.00
DELRAY BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$526,647.00
DELRAY BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #4	FIRE STATION	$39,903.00
DELRAY BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #5	FIRE STATION	$666,865.00
DELRAY BEACH	SOUTH COUNTY COURTHOUSE	GOVERNMENT	$12,129,812.00
DELRAY BEACH	DELRAY MEDICAL CENTER	HOSPITAL	$43,355,569.00
DELRAY BEACH	DELRAY BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$5,259,482.00
DELRAY BEACH	PALM BEACH COUNTY SHERIFF DISTRICT IV	LAW ENFORCEMENT	$9,919,059.00
DELRAY BEACH	HARBOURS EDGE	NURSING HOME	$41,610,620.00
DELRAY BEACH	HEALTH CENTER AT ABBEY DELRAY	NURSING HOME	$29,613,503.00
DELRAY BEACH	HEALTH CENTER AT ABBEY DELRAY SOUTH	NURSING HOME	$25,762,029.00
DELRAY BEACH	BANYAN CREEK	SCHOOL	$6,541,773.00
DELRAY BEACH	CARVER	SCHOOL	$12,036,686.00
DELRAY BEACH	ORCHARD VIEW	SCHOOL	$9,305,379.00
DELRAY BEACH	PINE GROVE	SCHOOL	$5,845,200.00
DELRAY BEACH	PLUMOSA	SCHOOL	$2,542,703.00
DELRAY BEACH	S.D. SPADY	SCHOOL	$12,183,277.00
DELRAY BEACH	VILLAGE ACADEMY	SCHOOL	$9,624,453.00
DELRAY BEACH	ATLANTIC HIGH	SCHOOL/SHELTER	$50,061,757.00
DELRAY BEACH	DELRAY BEACH WATER TREATMENT	UTILITY	$6,982,374.00
GREENACRES	ARBOR OAKS AT GREENACRES	ADULT LIVING	$4,522,583.00
GREENACRES	COTTAGES OF GREENACRES	ADULT LIVING	$3,351,648.00
GREENACRES	GREENACRES FIRE DEPARTMENT STATION #94	FIRE STATION	$6,028,767.00
GREENACRES	GREENACRES FIRE DEPARTMENT STATION #95	FIRE STATION	$6,028,767.00
GREENACRES	GREENACRES POLICE DEPARTMENT	LAW ENFORCEMENT	$6,028,767.00
GREENACRES	WOOD LAKE NURSING AND REHABILITATION CENTER	NURSING HOME	$4,058,970.00
GREENACRES	CHOLEE LAKE	SCHOOL	$11,466,924.00
GREENACRES	DIAMOND VIEW	SCHOOL	$14,010,766.00
GREENACRES	GREENACRES	SCHOOL	$7,999,301.00
GREENACRES	HERITAGE	SCHOOL	$12,225,777.00
GREENACRES	LC SWAIN	SCHOOL	$23,382,501.00
GREENACRES	LIBERTY PARK	SCHOOL	$11,149,825.00
GREENACRES	OKEEHEELEE	SCHOOL	$12,629,810.00

GREENACRES	TRADEWINDS	SCHOOL	$31,545,717.00
GREENACRES	JOHN I. LEONARD	SCHOOL/SHELTER	$40,463,849.00
GULF STREAM	GULFSTREAM POLICE DEPARTMENT	LAW ENFORCEMENT	$1,094,177.00
HAVERHILL	EL PINAR CARE CENTER, INC.	ADULT LIVING	$217,904.00
HAVERHILL	FAMILY RETIREMENT INN, INC.	ADULT LIVING	NA
HIGHLAND BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #6	FIRE STATION	$6,525,577.00
HIGHLAND BEACH	HIGHLAND BEACH PPOLICE DEPARTMENT	LAW ENFORCEMENT	$6,525,577.00
HYPOLUXO	MANALAPAN WATER TREATMENT	UTILITY	$424,881.00
JUNO BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #15	FIRE STATION	$792,490.00
JUNO BEACH	JUNO BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$2,104,882.00
JUNO BEACH	WATERFORD HEALTH CARE CENTER	NURSING HOME	$24,496,770.00
JUPITER	COURTYARD GARDENS OF JUPITER	ADULT LIVING	$7,731,724.00
JUPITER	MANGROVE BAY	ADULT LIVING	$15,731,344.00
JUPITER	MORNING STAR OF JUPITER INC #2	ADULT LIVING	$325,781.00
JUPITER	MORNING STAR OF JUPITER, INC.	ADULT LIVING	$193,562.00
JUPITER	ST JOSEPH'S ASSISTED LIVING	ADULT LIVING	$5,000,000.00
JUPITER	PALM BEACH COUNTY FIRE RESCUE STATION #16	FIRE STATION	$974,679.00
JUPITER	PALM BEACH COUNTY FIRE RESCUE STATION #18	FIRE STATION	$4,576,326.00
JUPITER	PALM BEACH COUNTY FIRE RESCUE STATION #19	FIRE STATION	$291,905.00
JUPITER	JUPITER MEDICAL CENTER	HOSPITAL	$33,820,959.00
JUPITER	JUPITER POLICE DEPARTMENT	LAW ENFORCEMENT	$20,070,469.00
JUPITER	JUPITER CARE CENTER	NURSING HOME	$3,432,364.00
JUPITER	JUPITER MEDICAL CENTER PAVILION INC	NURSING HOME	$6,372,706.00
JUPITER	BEACON COVE	SCHOOL	$10,065,593.00
JUPITER	JERRY THOMAS	SCHOOL	$10,585,387.00
JUPITER	JUPITER MIDDLE	SCHOOL	$11,745,241.00
JUPITER	JUPITER ELEMENTARY	SCHOOL	$11,364,324.00
JUPITER	JUPITER HIGH	SCHOOL	$44,806,719.00
JUPITER	LIGHTHOUSE	SCHOOL	$6,850,622.00
JUPITER	LIMESTONE CREEK	SCHOOL	$10,453,135.00
JUPITER	INDEPENDENCE	SCHOOL/SHELTER	$10,960,651.00
JUPITER	JUPITER WATER TREATMENT	UTILITY	$4,767,040.00
JUPITER INLET COLONY	JUPITER INLET COLONY POLICE DEPARTMENT	LAW ENFORCEMENT	$58,452.00
LAKE CLARKE SHORES	LAKE CLARKE SHORES POLICE DEPARTMENT	LAW ENFORCEMENT	$499,288.00
LAKE PARK	TROPICAL PALM ASSISTED	ADULT LIVING	$230,462.00
LAKE PARK	PALM BEACH COUNTY FIRE RESCUE STATION #68	FIRE STATION	$1,392,767.00
LAKE PARK	PALM BEACH COUNTY SHERIFF DISTRICT X	LAW ENFORCEMENT	$3,024,682.00
LAKE PARK	NORTH LAKE REHABILITATION AND HEALTH CENTER	NURSING HOME	$1,808,730.00
LAKE PARK	LAKE PARK	SCHOOL	$929,197.00
LAKE WORTH	CREST MANOR ASSISTED LIVING FACILITY	ADULT LIVING	$745,173.00

LAKE WORTH	NUESTRA CASA	ADULT LIVING	$237,292.00
LAKE WORTH	TROPICAL GARDEN VILLAS INC. (ANNEX)	ADULT LIVING	$210,438.00
LAKE WORTH	TROPICAL GARDEN VILLAS INC. (HOME)	ADULT LIVING	$210,438.00
LAKE WORTH	LAKE WORTH FIRE DEPARTMENT STATION #91	FIRE STATION	$6,471,068.00
LAKE WORTH	LAKE WORTH FIRE DEPARTMENT STATION #93	FIRE STATION	$421,386.00
LAKE WORTH	PALM BEACH COUNTY SHERIFF DISTRICT XIV	LAW ENFORCEMENT	$6,471,068.00
LAKE WORTH	AVANTE AT LAKE WORTH, INC.	NURSING HOME	$3,416,962.00
LAKE WORTH	LAKE WORTH MANOR	NURSING HOME	$4,048,109.00
LAKE WORTH	MEDICANA NURSING AND REHAB CENTER	NURSING HOME	$1,839,940.00
LAKE WORTH	TERRACES OF LAKE WORTH REHABILITATION AND HEALTH CENTER	NURSING HOME	$2,024,664.00
LAKE WORTH	BARTON	SCHOOL	$2,917,474.00
LAKE WORTH	HIGHLAND	SCHOOL	$11,820,781.00
LAKE WORTH	LAKE WORTH HIGH	SCHOOL	$25,315,485.00
LAKE WORTH	LAKE WORTH MIDDLE	SCHOOL	$10,597,470.00
LAKE WORTH	NORTH GRADE	SCHOOL	$277,200.00
LAKE WORTH	SOUTH GRADE	SCHOOL	$8,116,488.00
LAKE WORTH	LAKE WORTH MUNICIPAL WATER TREATMENT	UTILITY	$4,294,097.00
LANTANA	PALM BEACH CLUB, LLC	ADULT LIVING	$29,000,000.00
LANTANA	PALM BEACH COUNTY FIRE RESCUE STATION #37	FIRE STATION	$3,333,004.00
LANTANA	A G HOLLEY STATE	HOSPITAL	$39,127,458.00
LANTANA	FLORIDA HIGHWAY PATROL TROOP L	LAW ENFORCEMENT	$39,127,458.00
LANTANA	LANTANA POLICE DEPARTMENT	LAW ENFORCEMENT	$3,333,004.00
LANTANA	LANTANA ELEMENTARY	SCHOOL	$10,891,698.00
LANTANA	LANTANA MIDDLE	SCHOOL	$16,088,327.00
LANTANA	LANTANA WATER TREATMENT	UTILITY	$3,333,004.00
LOXAHATCHEE GROVES	PALM BEACH COUNTY FIRE RESCUE STATION #21	FIRE STATION	$841,883.00
LOXAHATCHEE GROVES	LOXAHATCHEE GROVES	SCHOOL	$5,926,736.00
MANALAPAN	PALM BEACH COUNTY FIRE RESCUE STATION #38	FIRE STATION	$1,133,311.00
MANALAPAN	MANALAPAN POLICE DEPARTMENT	LAW ENFORCEMENT	$1,133,311.00
MANGONIA PARK	MANGONIA PARK POLICE DEPARTMENT	LAW ENFORCEMENT	$1,134,878.00
NORTH PALM BEACH	NORTH PALM BEACH FIRE DEPARTMENT #67	FIRE STATION	$3,361,323.00
NORTH PALM BEACH	NORTH PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$3,361,323.00
NORTH PALM BEACH	NORTH PALM BEACH	SCHOOL	$2,655,928.00
OCEAN RIDGE	OCEAN RIDGE FIRE DEPARTMENT	FIRE STATION	$1,401,240.00
OCEAN RIDGE	OCEAN RIDGE POLICE DEPARTMENT	LAW ENFORCEMENT	$1,401,240.00
PAHOKEE	PALM BEACH COUNTY FIRE RESCUE STATION #72	FIRE STATION	$784,921.00
PAHOKEE	PALM BEACH COUNTY SHERIFF DISTRICT XII	LAW ENFORCEMENT	$410,952.00
PAHOKEE	GLADES HEALTH CARE CENTER	NURSING HOME	$1,734,078.00
PAHOKEE	PAHOKEE	SCHOOL	$2,438,757.00
PAHOKEE	PAHOKEE MIDDLE / HIGH SCHOOL	SCHOOL	$11,566,413.00

PAHOKEE	PAHOKEE	UTILITY	$410,952.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$5,275,979.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$2,368,745.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$23,230,865.00
PALM BEACH	PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$7,565,782.00
PALM BEACH	PALM BEACH PUBLIC	SCHOOL	$12,421,456.00
PALM BEACH GARDENS	CHATSWORTH AT PGA NATIONAL	ADULT LIVING	$6,856,348.00
PALM BEACH GARDENS	EMMANUEL CARE ALF, INC	ADULT LIVING	$276,353.00
PALM BEACH GARDENS	INN AT LA POSADA	ADULT LIVING	$40,806,279.00
PALM BEACH GARDENS	PROSPERITY OAKS	ADULT LIVING	$20,723,717.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #61	FIRE STATION	$12,430,908.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #62	FIRE STATION	$872,691.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #63	FIRE STATION	$2,975,818.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #64	FIRE STATION	$867,013.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #65	FIRE STATION	NA
PALM BEACH GARDENS	NORTH COUNTY COURTHOUSE	GOVERNMENT	$23,641,417.00
PALM BEACH GARDENS	PALM BEACH GARDENS MEDICAL CENTER	HOSPITAL	$20,000,000.00
PALM BEACH GARDENS	PALM BEACH GARDENS POLICE DEPARTMENT	LAW ENFORCEMENT	$12,430,908.00
PALM BEACH GARDENS	CHATSWORTH AT PGA NATIONAL	NURSING HOME	$6,856,348.00
PALM BEACH GARDENS	GARDENS COURT	NURSING HOME	$7,890,186.00
PALM BEACH GARDENS	HEARTLAND HEALTH CARE CENTER - PROSPERITY OAKS	NURSING HOME	$3,787,592.00
PALM BEACH GARDENS	NURSING CENTER AT LA POSADA, THE	NURSING HOME	$40,806,279.00
PALM BEACH GARDENS	ALLAMANDA	SCHOOL	$4,982,710.00
PALM BEACH GARDENS	HOWELL L. WATKINS	SCHOOL	$8,924,221.00
PALM BEACH GARDENS	MARSH POINTE	SCHOOL	$6,540,000.00
PALM BEACH GARDENS	PALM BEACH GARDENS ELEMENTARY	SCHOOL	$3,581,566.00
PALM BEACH GARDENS	PALM BEACH GARDENS HIGH	SCHOOL	$19,376,514.00
PALM BEACH GARDENS	TIMBER TRACE	SCHOOL	$21,676,687.00
PALM BEACH GARDENS	WATSON B. DUNCAN	SCHOOL	$21,676,687.00
PALM BEACH GARDENS	WILLIAM T. DWYER	SCHOOL/SHELTER	$27,921,562.00
PALM BEACH GARDENS	SEACOAST UTILITY HOOD ROAD WATER TREATMENT	UTILITY	$7,755,073.00
PALM BEACH SHORES	PALM BEACH SHORES FIRE DEPARTMENT	FIRE STATION	$6,395,575.00
PALM BEACH SHORES	PALM BEACH SHORES POLICE DEPARTMENT	LAW ENFORCEMENT	$6,395,575.00
PALM SPRINGS	PALM BEACH COUNTY FIRE RESCUE STATION #31	FIRE STATION	$144,492.00
PALM SPRINGS	PALM SPRINGS FIRE DEPARTMENT	FIRE STATION	$8,753,582.00
PALM SPRINGS	PALM SPRINGS POLICE DEPARTMENT	LAW ENFORCEMENT	$8,753,582.00
PALM SPRINGS	CLIFFORD O. TAYLOR / KIRKLANE	SCHOOL	$6,366,872.00
PALM SPRINGS	PALM SPRINGS ELEMENTARY	SCHOOL	$11,878,952.00
PALM SPRINGS	PALM SPRINGS MIDDLE	SCHOOL	$132,566.00
PALM SPRINGS	PALM SPRINGS WATER TREATMENT	UTILITY	$1,188,102.00

RIVIERA BEACH	GOLDEN YEARS ADULT LIVING	ADULT LIVING	$148,839.00
RIVIERA BEACH	HARBOR HOUSE RESORT	ADULT LIVING	$460,681.00
RIVIERA BEACH	HOWARD HOUSE	ADULT LIVING	$152,059.00
RIVIERA BEACH	MILLS ASSISTED LIVING FACILITY	ADULT LIVING	$159,320.00
RIVIERA BEACH	PALMS EDGE	ADULT LIVING	$2,890,714.00
RIVIERA BEACH	SEAGULL PLACE	ADULT LIVING	$437,105.00
RIVIERA BEACH	RIVIERA BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$7,077,409.00
RIVIERA BEACH	RIVIERA BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$1,778,976.00
RIVIERA BEACH	RIVIERA BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$3,027,557.00
RIVIERA BEACH	RIVIERA BEACH FIRE DEPARTMENT STATION #4	FIRE STATION	$1,555,018.00
RIVIERA BEACH	KINDRED HOSPITAL OF THE PALM BEACHES	HOSPITAL	$2,600,895.00
RIVIERA BEACH	VA MEDICAL CENTER	HOSPITAL	$1,555,018.00
RIVIERA BEACH	RIVIERA BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$7,077,409.00
RIVIERA BEACH	PORT OF PALM BEACH	PORT	$3,960,408.00
RIVIERA BEACH	JOHN F. KENNEDY	SCHOOL	$15,570,159.00
RIVIERA BEACH	LINCOLN	SCHOOL	$5,915,152.00
RIVIERA BEACH	SUNCOAST	SCHOOL	$8,505,336.00
RIVIERA BEACH	WASHINGTON	SCHOOL	$4,446,062.00
RIVIERA BEACH	WEST RIVIERA	SCHOOL	$6,133,949.00
RIVIERA BEACH	DR MARY McLEOD BETHUNE	SCHOOL/SHELTER	$9,554,070.00
RIVIERA BEACH	RIVIERA BEACH WATER DEPT.	UTILITY	$3,466,467.00
ROYAL PALM BEACH	CASSIE'S CASTLE	ADULT LIVING	$238,466.00
ROYAL PALM BEACH	MEADOWLARK INN	ADULT LIVING	$221,082.00
ROYAL PALM BEACH	ORANGE BLOSSOMS VILLA	ADULT LIVING	$203,285.00
ROYAL PALM BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #28	FIRE STATION	$9,050,098.00
ROYAL PALM BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #29	FIRE STATION	$485,685.00
ROYAL PALM BEACH	PALM BEACH COUNTY SHERIFF DISTRICT IX	LAW ENFORCEMENT	$9,050,098.00
ROYAL PALM BEACH	ROYAL MANOR	NURSING HOME	$4,334,863.00
ROYAL PALM BEACH	CRESTWOOD	SCHOOL	$9,898,169.00
ROYAL PALM BEACH	CYPRESS TRAILS	SCHOOL	$6,024,553.00
ROYAL PALM BEACH	H.L. JOHNSON	SCHOOL	$6,446,044.00
ROYAL PALM BEACH	ROYAL PALM BEACH ELEMENTARY	SCHOOL	$10,875,172.00
ROYAL PALM BEACH	ROYAL PALM BEACH HIGH	SCHOOL	$39,304,062.00
ROYAL PALM BEACH	ROYAL PALM BEACH WASTE WATER TREATMENT	UTILITY	$12,371,800.00
ROYAL PALM BEACH	ROYAL PALM BEACH WATER TREATMENT	UTILITY	$1,349,946.00
SOUTH BAY	PALM BEACH COUNTY FIRE RESCUE STATION #74	FIRE STATION	$898,711.00
SOUTH BAY	ROSENWALD	SCHOOL	$4,029,995.00
SOUTH BAY	SOUTH BAY WASTE WATER TREATMENT	UTILITY	$63,859.00
SOUTH BAY	SOUTH BAY WATER TREATMENT	UTILITY	$398,048.00
SOUTH PALM BEACH	SOUTH PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$1,947,102.00

TEQUESTA	CLARE BRIDGE OF TEQUESTA	ADULT LIVING	$2,360,000.00
TEQUESTA	STERLING HOUSE OF TEQUESTA	ADULT LIVING	$2,360,000.00
TEQUESTA	TERRACE COMMUNITIES TEQUESTA , LLC	ADULT LIVING	$7,693,231.00
TEQUESTA	PALM BEACH COUNTY FIRE RESCUE STATION #11	FIRE STATION	$281,656.00
TEQUESTA	TEQUESTA	FIRE STATION	$4,745,508.00
TEQUESTA	TEQUESTA POLICE DEPARTMENT	LAW ENFORCEMENT	$4,745,508.00
TEQUESTA	TEQUESTA WELL FIELD 1 PUMP	UTILITY	$1,477,678.00
TEQUESTA	TEQUESTA WATER TREATMENT	UTILITY	$1,529,130.00
WELLINGTON	A HOME FOR ME, INC	ADULT LIVING	$266,858.00
WELLINGTON	GOLDENCARE OF WELLINGTON, INC.	ADULT LIVING	$350,107.00
WELLINGTON	RESIDENCE AT PADDOCK PARK	ADULT LIVING	$247,554.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #20	FIRE STATION	$718,038.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #25	FIRE STATION	$625,370.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #27	FIRE STATION	$546,419.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #30	FIRE STATION	$882,142.00
WELLINGTON	WELLINGTON REGIONAL MEDICAL CENTER	HOSPITAL	$29,049,326.00
WELLINGTON	PALM BEACH COUNTY SHERIFF DISTRICT VIII	LAW ENFORCEMENT	$6,000,000.00
WELLINGTON	BINKS FOREST	SCHOOL	$13,123,925.00
WELLINGTON	ELBRIDGE GALE	SCHOOL	$3,277,054.00
WELLINGTON	EMERALD COVE	SCHOOL	$10,891,644.00
WELLINGTON	EQUESTRIAN TRAILS	SCHOOL	$16,917,723.00
WELLINGTON	NEW HORIZONS	SCHOOL	$5,496,729.00
WELLINGTON	POLO PARK	SCHOOL	$19,643,835.00
WELLINGTON	WELLINGTON HIGH	SCHOOL	$23,173,285.00
WELLINGTON	WELLINGTON ELEMENTARY	SCHOOL	$6,034,541.00
WELLINGTON	WELLINGTON LANDINGS	SCHOOL	$13,585,849.00
WELLINGTON	PALM BEACH CENTRAL	SCHOOL/SHELTER	$39,674,385.00
WELLINGTON	POTABLE WATER	UTILITY	$4,260,423.00
WELLINGTON	VILLAGE OF WELLINGTON WASTE WATER TREATMENT	UTILITY	$9,259,508.00
WELLINGTON	VILLAGE OF WELLINGTON WATER TREATMENT	UTILITY	$4,260,423.00
WEST PALM BEACH	ARDEN COURTS OF WEST PALM BEACH	ADULT LIVING	$7,879,246.00
WEST PALM BEACH	B P ASSISTED LIVING	ADULT LIVING	$245,088.00
WEST PALM BEACH	DOREEN'S ADULT LIVING	ADULT LIVING	$432,593.00
WEST PALM BEACH	FOUNTAINVIEW	ADULT LIVING	$13,700,000.00
WEST PALM BEACH	GARDEN VILLAS	ADULT LIVING	$484,695.00
WEST PALM BEACH	IT'S JUST LIKE HOME	ADULT LIVING	$136,165.00
WEST PALM BEACH	LOURDES PAVILION	ADULT LIVING	$31,349,832.00
WEST PALM BEACH	MARRIOTT HOME CARE	ADULT LIVING	$343,808.00
WEST PALM BEACH	MI CASA ES TU CASA #2	ADULT LIVING	$241,171.00
WEST PALM BEACH	PALM BEACH ASSISTED LIVING FACILITY	ADULT LIVING	$3,643,464.00

WEST PALM BEACH	SAVANNAH COURT OF THE PALM BEACHES	ADULT LIVING	$6,005,834.00
WEST PALM BEACH	ST MARY'S ASSISTED LIVING FACILITY	ADULT LIVING	$975,033.00
WEST PALM BEACH	TRADITION OF THE PALM BEACHES	ADULT LIVING	$25,301,615.00
WEST PALM BEACH	WINDSOR COURT	ADULT LIVING	$2,389,315.00
WEST PALM BEACH	WIZE CHOICE	ADULT LIVING	$467,985.00
WEST PALM BEACH	WYNDHAM HOUSE	ADULT LIVING	$550,999.00
WEST PALM BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #17	FIRE STATION	$2,054,344.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$3,767,202.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$2,744,185.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$2,706,451.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #4	FIRE STATION	$3,756,702.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #5	FIRE STATION	$672,258.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #6	FIRE STATION	$620,146.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #7	FIRE STATION	$1,181,594.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #8	FIRE STATION	$1,172,982.00
WEST PALM BEACH	CRIMINAL JUSTICE BLDG	GOVERNMENT	$29,529,660.00
WEST PALM BEACH	FOURTH DISTRICT COURT OF APPEALS	GOVERNMENT	$7,072,191.00
WEST PALM BEACH	GOVERNMENTAL CENTER	GOVERNMENT	$58,993,605.00
WEST PALM BEACH	MAIN COURTHOUSE	GOVERNMENT	$141,088,099.00
WEST PALM BEACH	PAUL G ROGERS FEDERAL BLDG	GOVERNMENT	$29,683,378.00
WEST PALM BEACH	COLUMBIA	HOSPITAL	$14,875,656.00
WEST PALM BEACH	GOOD SAMARITAN MEDICAL CENTER	HOSPITAL	$32,000,000.00
WEST PALM BEACH	OAKWOOD CENTER OF THOSPITALE PALM BEACHOSPITALES, INC.	HOSPITAL	$6,212,989.00
WEST PALM BEACH	ST MARY'S MEDICAL CENTER	HOSPITAL	$53,781,947.00
WEST PALM BEACH	PALM BEACH COUNTY SHERIFF DISTRICT III	LAW ENFORCEMENT	$2,054,344.00
WEST PALM BEACH	WEST PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$23,187,520.00
WEST PALM BEACH	DARCY HALL OF LIFE CARE	NURSING HOME	$5,456,603.00
WEST PALM BEACH	EDWARD J. HEALEY REHABILITATION AND NURSING CENTER	NURSING HOME	$7,281,254.00
WEST PALM BEACH	JOSEPH L MORSE GERIATRIC CENTER INC	NURSING HOME	$13,027,454.00
WEST PALM BEACH	LAKESIDE HEALTH CENTER	NURSING HOME	$3,095,033.00
WEST PALM BEACH	LOURDES-NOREEN MCKEEN RESIDENCE FOR GERIATRIC CARE, INC.	NURSING HOME	$31,349,832.00
WEST PALM BEACH	MANORCARE HEALTH SERVICES WEST PALM BEACH	NURSING HOME	$7,879,246.00
WEST PALM BEACH	PALM GARDEN OF WEST PALM BEACH	NURSING HOME	$5,802,782.00
WEST PALM BEACH	REHALABILITATION CENTER OF THE PALM BEACHES	NURSING HOME	$4,966,513.00
WEST PALM BEACH	SAVANNA COVE	NURSING HOME	$6,005,834.00
WEST PALM BEACH	A.W. DREYFOOS HIGH SCHOOL OF THE ARTS	SCHOOL	$29,718,687.00
WEST PALM BEACH	BAK MIDDLE SCHOOL OF THE ARTS	SCHOOL	$19,211,081.00
WEST PALM BEACH	BEAR LAKES	SCHOOL	$17,270,153.00
WEST PALM BEACH	BELVEDERE	SCHOOL	$9,206,675.00

WEST PALM BEACH	CONNISTON	SCHOOL	$19,579,247.00
WEST PALM BEACH	EGRET LAKE	SCHOOL	$6,439,434.00
WEST PALM BEACH	GRASSY WATERS	SCHOOL	$11,836,291.00
WEST PALM BEACH	INDIAN RIDGE LEARNING CENTER	SCHOOL	$14,904,444.00
WEST PALM BEACH	JEAGA	SCHOOL	$21,669,421.00
WEST PALM BEACH	NORTHBORO	SCHOOL	$3,896,791.00
WEST PALM BEACH	NORTHMORE	SCHOOL	$9,480,106.00
WEST PALM BEACH	PALM BEACH LAKES	SCHOOL	$22,901,573.00
WEST PALM BEACH	PALMETTO	SCHOOL	$5,136,819.00
WEST PALM BEACH	PLEASANT CITY	SCHOOL	$6,277,815.00
WEST PALM BEACH	ROOSEVELT ELEMENTARY	SCHOOL	$23,325,267.00
WEST PALM BEACH	ROOSEVELT MIDDLE	SCHOOL	$23,325,267.00
WEST PALM BEACH	SOUTH OLIVE	SCHOOL	$9,832,374.00
WEST PALM BEACH	U.B. KINSEY / PALMVIEW	SCHOOL	$10,169,641.00
WEST PALM BEACH	WESTWARD	SCHOOL	$4,152,285.00
WEST PALM BEACH	FOREST HILL	SCHOOL/SHELTER	$35,130,044.00
WEST PALM BEACH	WPB WATER TREATMENT	UTILITY	$8,669,182.00
UNINCORPORATED	A COUNTRY RESIDENCE	ADULT LIVING	$373,747.00
UNINCORPORATED	AAVALON OF PALM BEACH	ADULT LIVING	$4,230,247.00
UNINCORPORATED	ADULT LIVING HOME ASSISTED LIVING PLUS MORE	ADULT LIVING	$206,973.00
UNINCORPORATED	ARDEN COURTS OF DELRAY BEACH	ADULT LIVING	$8,955,804.00
UNINCORPORATED	ASSISTED LIVING OF PALM BEACH GARDENS, INC	ADULT LIVING	$374,547.00
UNINCORPORATED	ATLANTIS ASSISTED LIVING	ADULT LIVING	$2,573,016.00
UNINCORPORATED	ATRIA MERIDIAN	ADULT LIVING	$9,451,409.00
UNINCORPORATED	AVERY COTTAGE, INC.	ADULT LIVING	$167,580.00
UNINCORPORATED	AVOCADO SHADES, INC	ADULT LIVING	$358,545.00
UNINCORPORATED	B P ASSISTED LIVING FACILITY II	ADULT LIVING	$199,700.00
UNINCORPORATED	BRIGHTON GARDENS OF BOCA RATON	ADULT LIVING	$36,472,535.00
UNINCORPORATED	CARING HANDS AT ACREAGE, INC	ADULT LIVING	$453,612.00
UNINCORPORATED	CHRISTEL CARE INC	ADULT LIVING	$195,543.00
UNINCORPORATED	CLASSIC RESIDENCE BY HYATT AT LAKESIDE VILLAGE	ADULT LIVING	NA
UNINCORPORATED	COLONIAL INN, LLC	ADULT LIVING	$1,860,361.00
UNINCORPORATED	COUNTRY RETREAT	ADULT LIVING	$387,792.00
UNINCORPORATED	CRESTHAVEN EAST	ADULT LIVING	$6,201,107.00
UNINCORPORATED	FINNISH-AMERICAN REST HOME, INC.	ADULT LIVING	$6,072,674.00
UNINCORPORATED	HERITAGE PARK EAST, LLC	ADULT LIVING	$6,351,339.00
UNINCORPORATED	HERON'S RUN	ADULT LIVING	NA
UNINCORPORATED	HIDDEN GARDEN	ADULT LIVING	$318,649.00
UNINCORPORATED	HIDDEN PINES A.L.F., INC.	ADULT LIVING	$266,093.00
UNINCORPORATED	HOMEWOOD RESIDENCE AT BOCA RATON	ADULT LIVING	$5,088,811.00

UNINCORPORATED	HOMEWOOD RESIDENCE AT DELRAY BEACH	ADULT LIVING	$5,549,128.00
UNINCORPORATED	INN AT CASA DEL MAR	ADULT LIVING	$19,156,498.00
UNINCORPORATED	JOY OF LIVING CARE SERVICES	ADULT LIVING	$160,250.00
UNINCORPORATED	LEE RESIDENCE	ADULT LIVING	$540,572.00
UNINCORPORATED	LOVING WITH CARE INC	ADULT LIVING	$441,502.00
UNINCORPORATED	OAKBRIDGE TERRACE AL RESIDENCE AT EDGEWATER POINTE EST.	ADULT LIVING	$36,185,684.00
UNINCORPORATED	PERSONAL ELDER CARE	ADULT LIVING	$181,598.00
UNINCORPORATED	PERSONAL ELDER CARE II	ADULT LIVING	$188,786.00
UNINCORPORATED	PLEASANT RETIREMENT HOME INC.	ADULT LIVING	$201,664.00
UNINCORPORATED	PREFERRED LIFESTYLE	ADULT LIVING	$260,881.00
UNINCORPORATED	SUMMERVILLE AT BOYNTON BEACH	ADULT LIVING	$10,715,440.00
UNINCORPORATED	SUNRISE ADULT CARE	ADULT LIVING	$190,418.00
UNINCORPORATED	TERRACE AT WEST PALM BEACH	ADULT LIVING	$20,437,452.00
UNINCORPORATED	TRINITY CARE ASSISTED LIVING FACILITY	ADULT LIVING	$178,807.00
UNINCORPORATED	TYVAL ASSISTED LIVING FACILITY, LLC	ADULT LIVING	$189,306.00
UNINCORPORATED	VILLA OF KINGS & QUEENS OF DELRAY BEACH	ADULT LIVING	$468,172.00
UNINCORPORATED	WHITE PALMS	ADULT LIVING	$328,447.00
UNINCORPORATED	WHITEHALL BOCA RATON	ADULT LIVING	$8,642,874.00
UNINCORPORATED	YANIRI ASSISTED L IVING FACILITY	ADULT LIVING	$341,496.00
UNINCORPORATED	NORTH PALM BEACH COUNTY GENERAL AVIATION	AIRPORT	$30,548,545.00
UNINCORPORATED	PALM BEACH COUNTY GLADES AIRPORT	AIRPORT	NA
UNINCORPORATED	PALM BEACH COUNTY PARK	AIRPORT	$54,375,512.00
UNINCORPORATED	PALM BEACH INTERNATIONAL AIRPORT	AIRPORT	$259,457,962.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #14	FIRE STATION	$398,703.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #22	FIRE STATION	$8,000,000.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #23	FIRE STATION	$2,569,719.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #24	FIRE STATION	$408,126.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #26	FIRE STATION	$507,516.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #32	FIRE STATION	$664,046.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #33	FIRE STATION	$9,060,602.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #34	FIRE STATION	$959,700.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #35	FIRE STATION	$11,238,633.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #36	FIRE STATION	$668,086.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #41	FIRE STATION	$776,965.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #42	FIRE STATION	$2,653,609.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #44	FIRE STATION	$949,000.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #45	FIRE STATION	$774,363.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #46	FIRE STATION	$759,069.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #47	FIRE STATION	$1,533,087.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #48	FIRE STATION	$1,807,243.00

UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #51	FIRE STATION	$522,074.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #52	FIRE STATION	$361,823.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #53	FIRE STATION	$1,144,453.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #54	FIRE STATION	$631,896.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #55	FIRE STATION	$755,977.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #56	FIRE STATION	$263,114.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #57	FIRE STATION	$1,510,609.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #58	FIRE STATION	$589,208.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #81	FIRE STATION	$259,457,962.00
UNINCORPORATED	GUN CLUB ROAD COURT LOCATION	GOVERNMENT	$137,358,713.00
UNINCORPORATED	PALM BEACH COUNTY EOC	GOVERNMENT	$12,554,898.00
UNINCORPORATED	WEST COUNTY COURTHOUSE	GOVERNMENT	$14,888,853.00
UNINCORPORATED	WEST COUNTY ADMINISTRATION BLDG	GOVERNMENT	$1,913,673.00
UNINCORPORATED	PALMS WEST	HOSPITAL	$28,774,077.00
UNINCORPORATED	SELECT SPECIALTY HOSPITAL-PALM BEACH, INC	HOSPITAL	$9,483,195.00
UNINCORPORATED	WEST BOCA MEDICAL CENTER	HOSPITAL	$22,481,463.00
UNINCORPORATED	FLORIDA HIGHWAY PATROL TROOP K	LAW ENFORCEMENT	$6,301,912.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT II	LAW ENFORCEMENT	$259,457,962.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT V	LAW ENFORCEMENT	$14,888,853.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT VI	LAW ENFORCEMENT	$543,555.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT VII	LAW ENFORCEMENT	$1,144,453.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT VII M	LAW ENFORCEMENT	$2,765,578.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF HEADQUARTERS	LAW ENFORCEMENT	$137,358,713.00
UNINCORPORATED	AMERICAN-FINNISH NURSING HOME	NURSING HOME	$6,072,674.00
UNINCORPORATED	AZALEA COURT	NURSING HOME	$3,188,109.00
UNINCORPORATED	BOYNTON BEACH REHABILITATION CENTER	NURSING HOME	$6,526,815.00
UNINCORPORATED	BOYNTON HEALTH CARE CENTER	NURSING HOME	$3,513,754.00
UNINCORPORATED	CLASSIC RESIDENCE BY HYATT AT LAKESIDE VILLAGE	NURSING HOME	NA
UNINCORPORATED	CONSULATE HEALTH CARE OF WEST PALM BEACH	NURSING HOME	$3,572,157.00
UNINCORPORATED	CORAL BAY HEALTHCARE AND REHABILITATION	NURSING HOME	NA
UNINCORPORATED	CROSSINGS, THE	NURSING HOME	$4,236,012.00
UNINCORPORATED	HEARTLAND HEALTH CARE & REHAB CENTER - BOCA RATON	NURSING HOME	$4,585,343.00
UNINCORPORATED	LAKE VIEW CARE CENTER AT DELRAY	NURSING HOME	$3,672,551.00
UNINCORPORATED	LIBERTY INN, LLC	NURSING HOME	$11,532,913.00
UNINCORPORATED	MANORCARE HEALTH SERVICES	NURSING HOME	$8,955,804.00
UNINCORPORATED	MENORAH HOUSE	NURSING HOME	$3,746,403.00
UNINCORPORATED	SIGNATURE HEALTH CARE OF PALM BEACH	NURSING HOME	$3,709,017.00
UNINCORPORATED	STRATFORD COURT OF BOCA RATON	NURSING HOME	$36,472,535.00
UNINCORPORATED	WHITEHALL BOCA RATON	NURSING HOME	$8,642,874.00
UNINCORPORATED	WILLOWBROOKE COURT AT EDGEWATER POINTE	NURSING HOME	$36,185,684.00

	ESTATES		
UNINCORPORATED	ACREAGE PINES	SCHOOL	$6,148,248.00
UNINCORPORATED	ADULT EDUCATION CENTER	SCHOOL	$3,944,577.00
UNINCORPORATED	BENOIST FARMS	SCHOOL	$14,150,180.00
UNINCORPORATED	BERKSHIRE	SCHOOL	$14,228,391.00
UNINCORPORATED	CHRISTA McAULIFFE	SCHOOL	$508,868.00
UNINCORPORATED	CORAL REEF	SCHOOL	$11,852,417.00
UNINCORPORATED	CORAL SUNSET	SCHOOL	$11,023,107.00
UNINCORPORATED	CRYSTAL LAKES	SCHOOL	$8,011,679.00
UNINCORPORATED	DEL PRADO	SCHOOL	$6,997,363.00
UNINCORPORATED	DISCOVERY KEY	SCHOOL	$9,848,622.00
UNINCORPORATED	DWIGHT D. EISENHOWER	SCHOOL	$3,798,491.00
UNINCORPORATED	EAGLES LANDING	SCHOOL	$574,750.00
UNINCORPORATED	FOREST HILL	SCHOOL	$8,584,778.00
UNINCORPORATED	FRONTIER	SCHOOL	$9,656,300.00
UNINCORPORATED	GOLDEN GROVE	SCHOOL	$52,305.00
UNINCORPORATED	GROVE PARK	SCHOOL	$5,053,586.00
UNINCORPORATED	HAGEN ROAD	SCHOOL	$6,345,051.00
UNINCORPORATED	HAMMOCK POINTE	SCHOOL	$11,554,847.00
UNINCORPORATED	HIDDEN OAKS	SCHOOL	$19,602,183.00
UNINCORPORATED	INDIAN PINES	SCHOOL	$9,282,958.00
UNINCORPORATED	JUPITER FARMS	SCHOOL	$5,284,279.00
UNINCORPORATED	K.E. CUNNINGHAM / CANAL POINT	SCHOOL	$5,575,764.00
UNINCORPORATED	LOGGERS RUN	SCHOOL	$12,710,962.00
UNINCORPORATED	MANATEE	SCHOOL	$8,474,829.00
UNINCORPORATED	MEADOW PARK	SCHOOL	$10,700,731.00
UNINCORPORATED	MELALEUCA	SCHOOL	$5,077,494.00
UNINCORPORATED	MORIKAMI PARK	SCHOOL	$10,662,334.00
UNINCORPORATED	ODYSSEY	SCHOOL	$12,947,066.00
UNINCORPORATED	OLYMPIC HEIGHTS	SCHOOL	$28,200,318.00
UNINCORPORATED	OSCEOLA CREEK	SCHOOL	$18,082,003.00
UNINCORPORATED	PANTHER RUN	SCHOOL	$10,354,528.00
UNINCORPORATED	PIERCE HAMMOCK	SCHOOL	$11,700,205.00
UNINCORPORATED	PINE JOG (03-Y)	SCHOOL	$661,521.00
UNINCORPORATED	ROYAL PALM SCHOOL	SCHOOL	$42,538,965.00
UNINCORPORATED	SANDPIPER SHORES	SCHOOL	$11,508,210.00
UNINCORPORATED	SANTALUCES	SCHOOL	$42,538,965.00
UNINCORPORATED	SEMINOLE TRAILS	SCHOOL	$6,198,602.00
UNINCORPORATED	STARLIGHT COVE	SCHOOL	$12,035,111.00
UNINCORPORATED	SUNRISE PARK	SCHOOL	$13,533,931.00

UNINCORPORATED	SUNSET PALMS (03-Z)	SCHOOL	$1,583,981.00
UNINCORPORATED	WATERS EDGE	SCHOOL	$7,759,096.00
UNINCORPORATED	WESTERN PINES	SCHOOL	$52,305.00
UNINCORPORATED	WHISPERING PINES	SCHOOL	$8,654,815.00
UNINCORPORATED	WOODLANDS	SCHOOL	$12,567,750.00
UNINCORPORATED	WYNNEBROOK	SCHOOL	$4,157,931.00
UNINCORPORATED	PARK VISTA COMMUNITY	SCHOOL/SHELTER	$43,566,148.00
UNINCORPORATED	SEMINOLE RIDGE	SCHOOL/SHELTER	$41,468,460.00
UNINCORPORATED	WEST BOCA RATON COMMUNITY	SCHOOL/SHELTER	$22,486,715.00
UNINCORPORATED	WEST GATE	SCHOOL/SHELTER	$14,774,822.00
UNINCORPORATED	WEST BOYNTON RECREATION CENTER(PET FRIENDLY)	SHELTER	$7,114,795.00
UNINCORPORATED	SOUTH FLORIDA EXPO BLDG (SPECIAL CARE UNIT)	SHELTER	$30,354,108.00
UNINCORPORATED	BOYNTON BEACH WEST WATER TREATMENT	UTILITY	$1,874,704.00
UNINCORPORATED	LAKE CLARKE SHORES	UTILITY	$102,299.00
UNINCORPORATED	N. COUNTY GENERAL AIRPORT	UTILITY	$30,548,545.00
UNINCORPORATED	PALM BEACH COUNTY REPUMP #5	UTILITY	$3,850,109.00
UNINCORPORATED	PALM BEACH COUNTY WASTE WATER TREATMENT 2	UTILITY	$1,838,263.00
UNINCORPORATED	PALM BEACH COUNTY WASTE WATER TREATMENT 7	UTILITY	$711,280.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #1	UTILITY	$259,457,962.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #2	UTILITY	$2,226,646.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #3	UTILITY	$8,597,069.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #7	UTILITY	$711,280.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #8	UTILITY	$4,086,857.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #9S	UTILITY	$5,833,406.00
UNINCORPORATED	PALM SPRINGS WATER TREATMENT	UTILITY	$1,325,323.00
UNINCORPORATED	PRATT & WHITNEY INDUSTRIAL WASTEWATER	UTILITY	$40,000,000.00
UNINCORPORATED	SEACOAST UTILITY RICHARD ROAD WATER TREATMENT	UTILITY	$2,022,660.00
TOTAL			$6,269,489,798.00

VALUE OF CRITICAL FACILITIES AT RISK FROM FLOOD HAZARDS

JURISDICTION	FACILITY	TYPE	ESTIMATED VALUE
ATLANTIS	PALM BEACH COUNTY FIRE RESCUE STATION #43	FIRE STATION	$766,399.00
ATLANTIS	JFK MEDICAL CENTER	HOSPITAL	$67,884,466.00
ATLANTIS	ATLANTIS POLICE DEPARTMENT	LAW ENFORCEMENT	$1,301,044.00
BOYNTON BEACH	A NEW BEGINING ASSISTED LIVING, LLC	ADULT LIVING	$231,432.00
BOYNTON BEACH	POINTE AT NEWPORT PLACE, THE	ADULT LIVING	$4,581,221.00
BOYNTON BEACH	SIMPSON ADULT CARE FACILITY	ADULT LIVING	$133,776.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$1,813,965.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #5	FIRE STATION	$2,378,370.00
BOYNTON BEACH	HAMLIN PLACE	NURSING HOME	$3,627,559.00
BOYNTON BEACH	HEARTLAND HEALTH CARE CENTER - BOYNTON BEACH	NURSING HOME	$3,578,009.00
BOYNTON BEACH	CITRUS COVE	SCHOOL	$6,004,573.00
BOYNTON BEACH	CONGRESS	SCHOOL	$10,244,805.00
BOYNTON BEACH	FREEDOM SHORES	SCHOOL	$10,520,458.00
BOYNTON BEACH	GALAXY	SCHOOL	$6,087,229.00
BOYNTON BEACH	POINCIANA	SCHOOL	$412,131.00
BOYNTON BEACH	ROLLING GREEN	SCHOOL	$11,496,893.00
BOYNTON BEACH	BOYNTON BEACH	SCHOOL/SHELTER	$8,188,679.00
DELRAY BEACH	PINE GROVE	SCHOOL	$5,845,200.00
DELRAY BEACH	VILLAGE ACADEMY	SCHOOL	$9,624,453.00
DELRAY BEACH	DELRAY BEACH WATER TREATMENT	UTILITY	$6,982,374.00
GREENACRES	ARBOR OAKS AT GREENACRES	ADULT LIVING	$4,522,583.00
GREENACRES	COTTAGES OF GREENACRES	ADULT LIVING	$3,351,648.00
GREENACRES	GREENACRES FIRE DEPARTMENT STATION #94	FIRE STATION	$6,028,767.00
GREENACRES	GREENACRES FIRE DEPARTMENT STATION #95	FIRE STATION	$6,028,767.00
GREENACRES	GREENACRES POLICE DEPARTMENT	LAW ENFORCEMENT	$6,028,767.00
GREENACRES	WOOD LAKE NURSING AND REHABILITATION CENTER	NURSING HOME	$4,058,970.00
GREENACRES	CHOLEE LAKE	SCHOOL	$11,466,924.00
GREENACRES	DIAMOND VIEW	SCHOOL	$14,010,766.00
GREENACRES	GREENACRES	SCHOOL	$7,999,301.00
GREENACRES	HERITAGE	SCHOOL	$12,225,777.00
GREENACRES	LC SWAIN	SCHOOL	$23,382,501.00
GREENACRES	LIBERTY PARK	SCHOOL	$11,149,825.00
GREENACRES	OKEEHEELEE	SCHOOL	$12,629,810.00
GREENACRES	TRADEWINDS	SCHOOL	$31,545,717.00
GREENACRES	JOHN I. LEONARD	SCHOOL/SHELTER	$40,463,849.00
GULFSTREAM	GULFSTREAM POLICE DEPARTMENT	LAW ENFORCEMENT	$1,094,177.00
HAVERHILL	EL PINAR CARE CENTER, INC.	ADULT LIVING	$217,904.00
HAVERHILL	FAMILY RETIREMENT INN, INC.	ADULT LIVING	NA
JUNO BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #15	FIRE STATION	$792,490.00
JUPITER	COURTYARD GARDENS OF JUPITER	ADULT LIVING	$7,731,724.00
JUPITER	MORNING STAR OF JUPITER INC #2	ADULT LIVING	$325,781.00
JUPITER	MORNING STAR OF JUPITER, INC.	ADULT LIVING	$193,562.00
JUPITER	ST JOSEPH'S ASSISTED LIVING	ADULT LIVING	$5,000,000.00
JUPITER	PALM BEACH COUNTY FIRE RESCUE STATION #19	FIRE STATION	$291,905.00

JUPITER	JUPITER POLICE DEPARTMENT	LAW ENFORCEMENT	$20,070,469.00
JUPITER	JUPITER CARE CENTER	NURSING HOME	$3,432,364.00
JUPITER	JERRY THOMAS	SCHOOL	$10,585,387.00
JUPITER	JUPITER ELEMENTARY	SCHOOL	$11,364,324.00
JUPITER	LIGHTHOUSE	SCHOOL	$6,850,622.00
JUPITER	LIMESTONE CREEK	SCHOOL	$10,453,135.00
JUPITER	INDEPENDENCE	SCHOOL/SHELTER	$10,960,651.00
JUPITER	JUPITER WATER TREATMENT	UTILITY	$4,767,040.00
LAKE CLARKE SHORES	LAKE CLARKE SHORES POLICE DEPARTMENT	LAW ENFORCEMENT	$499,288.00
LAKE WORTH	CREST MANOR ASSISTED LIVING FACILITY	ADULT LIVING	$745,173.00
LAKE WORTH	NUESTRA CASA	ADULT LIVING	$237,292.00
LAKE WORTH	TROPICAL GARDEN VILLAS INC. (ANNEX)	ADULT LIVING	$210,438.00
LAKE WORTH	TROPICAL GARDEN VILLAS INC. (HOME)	ADULT LIVING	$210,438.00
LAKE WORTH	LAKE WORTH FIRE DEPARTMENT STATION #91	FIRE STATION	$6,471,068.00
LAKE WORTH	LAKE WORTH FIRE DEPARTMENT STATION #93	FIRE STATION	$421,386.00
LAKE WORTH	PALM BEACH COUNTY SHERIFF DISTRICT XIV	LAW ENFORCEMENT	$6,471,068.00
LAKE WORTH	AVANTE AT LAKE WORTH, INC.	NURSING HOME	$3,416,962.00
LAKE WORTH	LAKE WORTH MANOR	NURSING HOME	$4,048,109.00
LAKE WORTH	MEDICANA NURSING AND REHAB CENTER	NURSING HOME	$1,839,940.00
LAKE WORTH	TERRACES OF LAKE WORTH REHABILITATION AND HEALTH CENTER	NURSING HOME	$2,024,664.00
LAKE WORTH	BARTON	SCHOOL	$2,917,474.00
LAKE WORTH	HIGHLAND	SCHOOL	$11,820,781.00
LAKE WORTH	LAKE WORTH HIGH	SCHOOL	$25,315,485.00
LAKE WORTH	LAKE WORTH MIDDLE	SCHOOL	$10,597,470.00
LAKE WORTH	NORTH GRADE	SCHOOL	$277,200.00
LAKE WORTH	SOUTH GRADE	SCHOOL	$8,116,488.00
LAKE WORTH	LAKE WORTH MUNICIPAL WATER TREATMENT	UTILITY	$4,294,097.00
LANTANA	PALM BEACH CLUB, LLC	ADULT LIVING	$29,000,000.00
LANTANA	PALM BEACH COUNTY FIRE RESCUE STATION #37	FIRE STATION	$3,333,004.00
LANTANA	A G HOLLEY STATE	HOSPITAL	$39,127,458.00
LANTANA	FLORIDA HIGHWAY PATROL TROOP L	LAW ENFORCEMENT	$39,127,458.00
LANTANA	LANTANA POLICE DEPARTMENT	LAW ENFORCEMENT	$3,333,004.00
LANTANA	LANTANA ELEMENTARY	SCHOOL	$10,891,698.00
LANTANA	LANTANA MIDDLE	SCHOOL	$16,088,327.00
LANTANA	LANTANA WATER TREATMENT	UTILITY	$3,333,004.00
LOXAHATCHEE GROVES	PALM BEACH COUNTY FIRE RESCUE STATION #21	FIRE STATION	$841,883.00
LOXAHATCHEE GROVES	LOXAHATCHEE GROVES	SCHOOL	$5,926,736.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$5,275,979.00
PALM BEACH	PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$7,565,782.00
PALM BEACH	PALM BEACH PUBLIC	SCHOOL	$12,421,456.00
PALM BEACH GARDENS	CHATSWORTH AT PGA NATIONAL	ADULT LIVING	$6,856,348.00
PALM BEACH GARDENS	EMMANUEL CARE ALF, INC	ADULT LIVING	$276,353.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #61	FIRE STATION	$12,430,908.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #62	FIRE STATION	$872,691.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #64	FIRE STATION	$867,013.00
PALM BEACH GARDENS	PALM BEACH GARDENS MEDICAL CENTER	HOSPITAL	$20,000,000.00
PALM BEACH GARDENS	PALM BEACH GARDENS POLICE DEPARTMENT	LAW ENFORCEMENT	$12,430,908.00

PALM BEACH GARDENS	CHATSWORTH AT PGA NATIONAL	NURSING HOME	$6,856,348.00
PALM BEACH GARDENS	HOWELL L. WATKINS	SCHOOL	$8,924,221.00
PALM BEACH GARDENS	MARSH POINTE	SCHOOL	$6,540,000.00
PALM BEACH GARDENS	PALM BEACH GARDENS ELEMENTARY	SCHOOL	$3,581,566.00
PALM BEACH GARDENS	PALM BEACH GARDENS HIGH	SCHOOL	$19,376,514.00
PALM BEACH GARDENS	WATSON B. DUNCAN	SCHOOL	$21,676,687.00
PALM SPRINGS	PALM BEACH COUNTY FIRE RESCUE STATION #31	FIRE STATION	$144,492.00
PALM SPRINGS	PALM SPRINGS FIRE DEPARTMENT	FIRE STATION	$8,753,582.00
PALM SPRINGS	PALM SPRINGS POLICE DEPARTMENT	LAW ENFORCEMENT	$8,753,582.00
PALM SPRINGS	CLIFFORD O. TAYLOR / KIRKLANE	SCHOOL	$6,366,872.00
PALM SPRINGS	PALM SPRINGS ELEMENTARY	SCHOOL	$11,878,952.00
PALM SPRINGS	PALM SPRINGS MIDDLE	SCHOOL	$132,566.00
PALM SPRINGS	PALM SPRINGS WATER TREATMENT	UTILITY	$1,188,102.00
RIVIERA BEACH	HOWARD HOUSE	ADULT LIVING	$152,059.00
ROYAL PALM BEACH	CASSIE'S CASTLE	ADULT LIVING	$238,466.00
ROYAL PALM BEACH	MEADOWLARK INN	ADULT LIVING	$221,082.00
ROYAL PALM BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #28	FIRE STATION	$9,050,098.00
ROYAL PALM BEACH	ROYAL MANOR	NURSING HOME	$4,334,863.00
ROYAL PALM BEACH	CRESTWOOD	SCHOOL	$9,898,169.00
ROYAL PALM BEACH	CYPRESS TRAILS	SCHOOL	$6,024,553.00
ROYAL PALM BEACH	H.L. JOHNSON	SCHOOL	$6,446,044.00
ROYAL PALM BEACH	ROYAL PALM BEACH ELEMENTARY	SCHOOL	$10,875,172.00
ROYAL PALM BEACH	ROYAL PALM BEACH HIGH	SCHOOL	$39,304,062.00
ROYAL PALM BEACH	ROYAL PALM BEACH WASTE WATER TREATMENT	UTILITY	$12,371,800.00
ROYAL PALM BEACH	ROYAL PALM BEACH WATER TREATMENT	UTILITY	$1,349,946.00
WELLINGTON	GOLDENCARE OF WELLINGTON, INC.	ADULT LIVING	$350,107.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #25	FIRE STATION	$625,370.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #30	FIRE STATION	$882,142.00
WELLINGTON	PALM BEACH COUNTY SHERIFF DISTRICT VIII	LAW ENFORCEMENT	$6,000,000.00
WELLINGTON	EMERALD COVE	SCHOOL	$10,891,644.00
WELLINGTON	NEW HORIZONS	SCHOOL	$5,496,729.00
WELLINGTON	WELLINGTON HIGH	SCHOOL	$23,173,285.00
WELLINGTON	WELLINGTON ELEMENTARY	SCHOOL	$6,034,541.00
WELLINGTON	WELLINGTON LANDINGS	SCHOOL	$13,585,849.00
WELLINGTON	PALM BEACH CENTRAL	SCHOOL/SHELTER	$39,674,385.00
WELLINGTON	POTABLE WATER	UTILITY	$4,260,423.00
WELLINGTON	VILLAGE OF WELLINGTON WATER TREATMENT	UTILITY	$4,260,423.00
WEST PALM BEACH	MI CASA ES TU CASA #2	ADULT LIVING	$241,171.00
WEST PALM BEACH	TRADITION OF THE PALM BEACHES	ADULT LIVING	$25,301,615.00
WEST PALM BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #17	FIRE STATION	$2,054,344.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #4	FIRE STATION	$3,756,702.00
WEST PALM BEACH	OAKWOOD CENTER OF THOSPITALE PALM BEACHOSPITALES, INC.	HOSPITAL	$6,212,989.00
WEST PALM BEACH	PALM BEACH COUNTY SHERIFF DISTRICT III	LAW ENFORCEMENT	$2,054,344.00
WEST PALM BEACH	EDWARD J. HEALEY REHABILITATION AND NURSING CENTER	NURSING HOME	$7,281,254.00
WEST PALM BEACH	JOSEPH L MORSE GERIATRIC CENTER INC	NURSING HOME	$13,027,454.00
WEST PALM BEACH	EGRET LAKE	SCHOOL	$6,439,434.00
WEST PALM BEACH	WESTWARD	SCHOOL	$4,152,285.00

WEST PALM BEACH	FOREST HILL	SCHOOL/SHELTER	$35,130,044.00
WEST PALM BEACH	WPB WATER TREATMENT	UTILITY	$8,669,182.00
UNINCORPORATED	A COUNTRY RESIDENCE	ADULT LIVING	$373,747.00
UNINCORPORATED	AAVALON OF PALM BEACH	ADULT LIVING	$4,230,247.00
UNINCORPORATED	ASSISTED LIVING OF PALM BEACH GARDENS, INC	ADULT LIVING	$374,547.00
UNINCORPORATED	ATLANTIS ASSISTED LIVING	ADULT LIVING	$2,573,016.00
UNINCORPORATED	ATRIA MERIDIAN	ADULT LIVING	$9,451,409.00
UNINCORPORATED	AVERY COTTAGE, INC.	ADULT LIVING	$167,580.00
UNINCORPORATED	AVOCADO SHADES, INC	ADULT LIVING	$358,545.00
UNINCORPORATED	B P ASSISTED LIVING FACILITY II	ADULT LIVING	$199,700.00
UNINCORPORATED	CLASSIC RESIDENCE BY HYATT AT LAKESIDE VILLAGE	ADULT LIVING	NA
UNINCORPORATED	CRESTHAVEN EAST	ADULT LIVING	$6,201,107.00
UNINCORPORATED	FINNISH-AMERICAN REST HOME, INC.	ADULT LIVING	$6,072,674.00
UNINCORPORATED	HERON'S RUN	ADULT LIVING	NA
UNINCORPORATED	HIDDEN GARDEN	ADULT LIVING	$318,649.00
UNINCORPORATED	LEE RESIDENCE	ADULT LIVING	$540,572.00
UNINCORPORATED	LOVING WITH CARE INC	ADULT LIVING	$441,502.00
UNINCORPORATED	PERSONAL ELDER CARE II	ADULT LIVING	$188,786.00
UNINCORPORATED	PLEASANT RETIREMENT HOME INC.	ADULT LIVING	$201,664.00
UNINCORPORATED	PREFERRED LIFESTYLE	ADULT LIVING	$260,881.00
UNINCORPORATED	SUMMERVILLE AT BOYNTON BEACH	ADULT LIVING	$10,715,440.00
UNINCORPORATED	SUNRISE ADULT CARE	ADULT LIVING	$190,418.00
UNINCORPORATED	TRINITY CARE ASSISTED LIVING FACILITY	ADULT LIVING	$178,807.00
UNINCORPORATED	TYVAL ASSISTED LIVING FACILITY, LLC	ADULT LIVING	$189,306.00
UNINCORPORATED	YANIRI ASSISTED L IVING FACILITY	ADULT LIVING	$341,496.00
UNINCORPORATED	NORTH PALM BEACH COUNTY GENERAL AVIATION	AIRPORT	$30,548,545.00
UNINCORPORATED	PALM BEACH COUNTY PARK	AIRPORT	$54,375,512.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #24	FIRE STATION	$408,126.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #26	FIRE STATION	$507,516.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #32	FIRE STATION	$664,046.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #33	FIRE STATION	$9,060,602.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #35	FIRE STATION	$11,238,633.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #36	FIRE STATION	$668,086.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #46	FIRE STATION	$759,069.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #57	FIRE STATION	$1,510,609.00
UNINCORPORATED	GUN CLUB ROAD COURT LOCATION	GOVERNMENT	$137,358,713.00
UNINCORPORATED	PALM BEACH COUNTY EOC	GOVERNMENT	$12,554,898.00
UNINCORPORATED	PALMS WEST	HOSPITAL	$28,774,077.00
UNINCORPORATED	SELECT SPECIALTY HOSPITAL-PALM BEACH, INC	HOSPITAL	$9,483,195.00
UNINCORPORATED	FLORIDA HIGHWAY PATROL TROOP K	LAW ENFORCEMENT	$6,301,912.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT VI	LAW ENFORCEMENT	$543,555.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF HEADQUARTERS	LAW ENFORCEMENT	$137,358,713.00
UNINCORPORATED	AMERICAN-FINNISH NURSING HOME	NURSING HOME	$6,072,674.00
UNINCORPORATED	BOYNTON BEACH REHABILITATION CENTER	NURSING HOME	$6,526,815.00
UNINCORPORATED	CLASSIC RESIDENCE BY HYATT AT LAKESIDE VILLAGE	NURSING HOME	NA
UNINCORPORATED	CONSULATE HEALTH CARE OF WEST PALM BEACH	NURSING HOME	$3,572,157.00
UNINCORPORATED	CORAL BAY HEALTHCARE AND REHABILITATION	NURSING HOME	NA

UNINCORPORATED	CROSSINGS, THE	NURSING HOME	$4,236,012.00
UNINCORPORATED	LIBERTY INN, LLC	NURSING HOME	$11,532,913.00
UNINCORPORATED	SIGNATURE HEALTH CARE OF PALM BEACH	NURSING HOME	$3,709,017.00
UNINCORPORATED	BERKSHIRE	SCHOOL	$14,228,391.00
UNINCORPORATED	CORAL REEF	SCHOOL	$11,852,417.00
UNINCORPORATED	CRYSTAL LAKES	SCHOOL	$8,011,679.00
UNINCORPORATED	DWIGHT D. EISENHOWER	SCHOOL	$3,798,491.00
UNINCORPORATED	FOREST HILL	SCHOOL	$8,584,778.00
UNINCORPORATED	FRONTIER	SCHOOL	$9,656,300.00
UNINCORPORATED	HIDDEN OAKS	SCHOOL	$19,602,183.00
UNINCORPORATED	INDIAN PINES	SCHOOL	$9,282,958.00
UNINCORPORATED	MANATEE	SCHOOL	$8,474,829.00
UNINCORPORATED	MEADOW PARK	SCHOOL	$10,700,731.00
UNINCORPORATED	MELALEUCA	SCHOOL	$5,077,494.00
UNINCORPORATED	PINE JOG (03-Y)	SCHOOL	$661,521.00
UNINCORPORATED	ROYAL PALM SCHOOL	SCHOOL	$42,538,965.00
UNINCORPORATED	SANTALUCES	SCHOOL	$42,538,965.00
UNINCORPORATED	STARLIGHT COVE	SCHOOL	$12,035,111.00
UNINCORPORATED	WYNNEBROOK	SCHOOL	$4,157,931.00
UNINCORPORATED	PARK VISTA COMMUNITY	SCHOOL/SHELTER	$43,566,148.00
UNINCORPORATED	SEMINOLE RIDGE	SCHOOL/SHELTER	$41,468,460.00
UNINCORPORATED	PET FRIENDLY (WEST BOYNTON RECREATION CENTER)	SHELTER	$7,114,795.00
UNINCORPORATED	BOYNTON BEACH WEST WATER TREATMENT	UTILITY	$1,874,704.00
UNINCORPORATED	LAKE CLARKE SHORES	UTILITY	$102,299.00
UNINCORPORATED	N. COUNTY GENERAL AIRPORT	UTILITY	$30,548,545.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #1	UTILITY	$259,457,962.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #2	UTILITY	$2,226,646.00
UNINCORPORATED	PALM SPRINGS WATER TREATMENT	UTILITY	$1,325,323.00
UNINCORPORATED	SEACOAST UTILITY RICHARD ROAD WATER TREATMENT	UTILITY	$2,022,660.00
TOTAL			$2,326,904,662.00

VALUE OF CRITICAL FACILITIES AT RISK FROM WILDLAND URBAN INTERFACE FIRE HAZARD

JURISDICTION	FACILITY	TYPE	ESTIMATED VALUE
LOXAHATCHEE GROVES	PALM BEACH COUNTY FIRE RESCUE STATION #21	FIRE STATION	$841,883.00
LOXAHATCHEE GROVES	LOXAHATCHEE GROVES	SCHOOL	$5,926,736.00
WELLINGTON	A HOME FOR ME, INC	ADULT LIVING	$266,858.00
WELLINGTON	GOLDENCARE OF WELLINGTON, INC.	ADULT LIVING	$350,107.00
WELLINGTON	RESIDENCE AT PADDOCK PARK	ADULT LIVING	$247,554.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #20	FIRE STATION	$718,038.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #25	FIRE STATION	$625,370.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #27	FIRE STATION	$546,419.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #30	FIRE STATION	$882,142.00
WELLINGTON	WELLINGTON REGIONAL MEDICAL CENTER	HOSPITAL	$29,049,326.00
WELLINGTON	PALM BEACH COUNTY SHERIFF DISTRICT VIII	LAW ENFORCEMENT	$6,000,000.00
WELLINGTON	BINKS FOREST	SCHOOL	$13,123,925.00
WELLINGTON	ELBRIDGE GALE	SCHOOL	$3,277,054.00
WELLINGTON	EMERALD COVE	SCHOOL	$10,891,644.00
WELLINGTON	EQUESTRIAN TRAILS	SCHOOL	$16,917,723.00
WELLINGTON	NEW HORIZONS	SCHOOL	$5,496,729.00
WELLINGTON	POLO PARK	SCHOOL	$19,643,835.00
WELLINGTON	WELLINGTON HIGH	SCHOOL	$23,173,285.00
WELLINGTON	WELLINGTON ELEMENTARY	SCHOOL	$6,034,541.00
WELLINGTON	WELLINGTON LANDINGS	SCHOOL	$13,585,849.00
WELLINGTON	PALM BEACH CENTRAL	SCHOOL/SHELTER	$39,674,385.00
WELLINGTON	POTABLE WATER	UTILITY	$4,260,423.00
WELLINGTON	VILLAGE OF WELLINGTON WASTE WATER TREATMENT	UTILITY	$9,259,508.00
WELLINGTON	VILLAGE OF WELLINGTON WATER TREATMENT	UTILITY	$4,260,423.00
UNINCORPORATED	A COUNTRY RESIDENCE	ADULT LIVING	$373,747.00
UNINCORPORATED	AVOCADO SHADES, INC	ADULT LIVING	$358,545.00
UNINCORPORATED	CARING HANDS AT ACREAGE, INC	ADULT LIVING	$453,612.00
UNINCORPORATED	HIDDEN PINES A.L.F., INC.	ADULT LIVING	$266,093.00
UNINCORPORATED	LOVING WITH CARE INC	ADULT LIVING	$441,502.00
UNINCORPORATED	YANIRI ASSISTED L IVING FACILITY	ADULT LIVING	$341,496.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #14	FIRE STATION	$398,703.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #22	FIRE STATION	$8,000,000.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #26	FIRE STATION	$507,516.00
UNINCORPORATED	PALMS WEST	HOSPITAL	$28,774,077.00
UNINCORPORATED	ACREAGE PINES	SCHOOL	$6,148,248.00
UNINCORPORATED	FRONTIER	SCHOOL	$9,656,300.00
UNINCORPORATED	GOLDEN GROVE	SCHOOL	$52,305.00
UNINCORPORATED	JUPITER FARMS	SCHOOL	$5,284,279.00
UNINCORPORATED	OSCEOLA CREEK	SCHOOL	$18,082,003.00
UNINCORPORATED	PIERCE HAMMOCK	SCHOOL	$11,700,205.00
UNINCORPORATED	WESTERN PINES	SCHOOL	$52,305.00
UNINCORPORATED	SEMINOLE RIDGE	SCHOOL/SHELTER	$41,468,460.00
TOTAL			$347,413,153.00

VALUE OF CRITICAL FACILITIES AT RISK FROM COASTAL EROSION HAZARDS

JURISDICTION	FACILITY	TYPE	ESTIMATED VALUE
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #3	FIRE STATION	$8,974,393.00
DELRAY BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$2,989,518.00
GULF STREAM	GULFSTREAM POLICE DEPARTMENT	LAW ENFORCEMENT	$1,094,177.00
JUNO BEACH	JUNO BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$2,104,882.00
JUPITER INLET COLONY	JUPITER INLET COLONY POLICE DEPARTMENT	LAW ENFORCEMENT	$58,452.00
LANTANA	PALM BEACH CLUB, LLC	ADULT LIVING	$29,000,000.00
OCEAN RIDGE	OCEAN RIDGE FIRE DEPARTMENT	FIRE STATION	$1,401,240.00
OCEAN RIDGE	OCEAN RIDGE POLICE DEPARTMENT	LAW ENFORCEMENT	$1,401,240.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$5,275,979.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$2,368,745.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$23,230,865.00
PALM BEACH	PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$7,565,782.00
RIVIERA BEACH	RIVIERA BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$3,027,557.00
SOUTH PALM BEACH	SOUTH PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$1,947,102.00
TOTAL			$90,439,932.00

VALUE OF CRITICAL FACILITIES AT RISK FROM HERBERT HOOVER DIKE FAILURE

JURISDICTION	FACILITY	TYPE	ESTIMATED VALUE
BELLE GLADE	BELLE GLADE STATE AIRPORT	AIRPORT	$355,511.00
BELLE GLADE	PALM BEACH COUNTY FIRE RESCUE STATION #73	FIRE STATION	$2,706,958.00
BELLE GLADE	GLADES GENERAL	HOSPITAL	$6,786,526.00
BELLE GLADE	BELLE GLADE	SCHOOL	$8,786,840.00
BELLE GLADE	GLADE VIEW	SCHOOL	$3,711,299.00
BELLE GLADE	GOVE	SCHOOL	$4,321,950.00
BELLE GLADE	PIONEER PARK	SCHOOL	$25,505,038.00
BELLE GLADE	GLADES CENTRAL	SCHOOL/SHELTER	$25,505,038.00
BELLE GLADE	LAKE SHORE MIDDLE	SCHOOL/SHELTER	$16,529,863.00
BELLE GLADE	BELLE GLADE WATER TREATMENT	UTILITY	$574,741.00
PAHOKEE	PALM BEACH COUNTY FIRE RESCUE STATION #72	FIRE STATION	$784,921.00
PAHOKEE	PALM BEACH COUNTY SHERIFF DISTRICT XII	LAW ENFORCEMENT	$410,952.00
PAHOKEE	GLADES HEALTH CARE CENTER	NURSING HOME	$1,734,078.00
PAHOKEE	PAHOKEE	SCHOOL	$2,438,757.00
PAHOKEE	PAHOKEE MIDDLE / HIGH	SCHOOL	$11,566,413.00
PAHOKEE	PAHOKEE	UTILITY	$410,952.00
SOUTH BAY	PALM BEACH COUNTY FIRE RESCUE STATION #74	FIRE STATION	$898,711.00
SOUTH BAY	ROSENWALD	SCHOOL	$4,029,995.00
SOUTH BAY	SOUTH BAY WASTE WATER TREATMENT	UTILITY	$63,859.00
SOUTH BAY	SOUTH BAY WATER TREATMENT	UTILITY	$398,048.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #8	FIRE STATION	$1,172,982.00
WEST PALM BEACH	PALM BEACH COUNTY SHERIFF DISTRICT III	LAW ENFORCEMENT	$2,054,344.00
UNINCORPORATED	CARING HANDS AT ACREAGE, INC	ADULT LIVING	$453,612.00
UNINCORPORATED	YANIRI ASSISTED L IVING FACILITY	ADULT LIVING	$341,496.00
UNINCORPORATED	PALM BEACH COUNTY GLADES AIRPORT	AIRPORT	$0.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #26	FIRE STATION	$507,516.00
UNINCORPORATED	WEST COUNTY COURTHOUSE	GOVERNMENT	$14,888,853.00
UNINCORPORATED	WEST COUNTY ADMINISTRATION BLDG	GOVERNMENT	$1,913,673.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT V	LAW ENFORCEMENT	$14,888,853.00
UNINCORPORATED	ACREAGE PINES	SCHOOL	$6,148,248.00
UNINCORPORATED	FRONTIER	SCHOOL	$9,656,300.00
UNINCORPORATED	K.E. CUNNINGHAM / CANAL POINT	SCHOOL	$5,575,764.00
UNINCORPORATED	OSCEOLA CREEK	SCHOOL	$18,082,003.00
UNINCORPORATED	PIERCE HAMMOCK	SCHOOL	$11,700,205.00
UNINCORPORATED	N. COUNTY GENERAL AIRPORT	UTILITY	$30,548,545.00
TOTAL			$235,452,844.00

VALUE OF CRITCAL FACILITIES AT RISK FROM AGRICULTURAL HAZARDS

FACILITY	TYPE	ESTIMATED VALUE
BELLE GLADE STATE AIRPORT	AIRPORT	$355,511.00
PALM BEACH COUNTY FIRE RESCUE STATION #73	FIRE STATION	$2,706,958.00
GLADES GENERAL	HOSPITAL	$6,786,526.00
BELLE GLADE	SCHOOL	$8,786,840.00
GLADE VIEW	SCHOOL	$3,711,299.00
GOVE	SCHOOL	$4,321,950.00
PIONEER PARK	SCHOOL	$25,505,038.00
GLADES CENTRAL	SCHOOL/SHELTER	$25,505,038.00
LAKE SHORE MIDDLE	SCHOOL/SHELTER	$16,529,863.00
BELLE GLADE WATER TREATMENT	UTILITY	$574,741.00
PALM BEACH COUNTY FIRE RESCUE STATION #72	FIRE STATION	$784,921.00
PALM BEACH COUNTY SHERIFF DISTRICT XII	LAW ENFORCEMENT	$410,952.00
GLADES HEALTH CARE CENTER	NURSING HOME	$1,734,078.00
PAHOKEE	SCHOOL	$2,438,757.00
PAHOKEE MIDDLE / HIGH	SCHOOL	$11,566,413.00
PAHOKEE	UTILITY	$410,952.00
PALM BEACH COUNTY FIRE RESCUE STATION #74	FIRE STATION	$898,711.00
ROSENWALD	SCHOOL	$4,029,995.00
SOUTH BAY WASTE WATER TREATMENT	UTILITY	$63,859.00
SOUTH BAY WATER TREATMENT	UTILITY	$398,048.00
PALM BEACH COUNTY GLADES AIRPORT	AIRPORT	NA
PALM BEACH COUNTY SHERIFF DISTRICT V	LAW ENFORCEMENT	$14,888,853.00
K.E. CUNNINGHAM / CANAL POINT	SCHOOL	$5,575,764.00
WEST COUNTY COURTHOUSE	GOVERNMENT	$14,888,853.00
WEST COUNTY ADMINISTRATION BLDG	GOVERNMENT	$1,913,673.00
TOTAL		$154,787,593.00

VALUE OF CRITICAL FACILITIES AT RISK FROM

COUNTY-WIDE OR LOCALIZED HAZARDS BY JURISDICTION

JURISDICTION	FACILITY	TYPE	EST. VALUE
ATLANTIS	PALM BEACH COUNTY FIRE RESCUE STATION #43	FIRE STATION	$766,399.00
ATLANTIS	JFK MEDICAL CENTER	HOSPITAL	$67,884,466.00
ATLANTIS	ATLANTIS POLICE DEPARTMENT	LAW ENFORCEMENT	$1,301,044.00
BELLE GLADE	BELLE GLADE STATE AIRPORT	AIRPORT	$355,511.00
BELLE GLADE	PALM BEACH COUNTY FIRE RESCUE STATION #73	FIRE STATION	$2,706,958.00
BELLE GLADE	GLADES GENERAL	HOSPITAL	$6,786,526.00
BELLE GLADE	BELLE GLADE	SCHOOL	$8,786,840.00
BELLE GLADE	GLADE VIEW	SCHOOL	$3,711,299.00
BELLE GLADE	GOVE	SCHOOL	$4,321,950.00
BELLE GLADE	PIONEER PARK	SCHOOL	$25,505,038.00
BELLE GLADE	GLADES CENTRAL	SCHOOL/SHELTER	$25,505,038.00
BELLE GLADE	LAKE SHORE MIDDLE	SCHOOL/SHELTER	$16,529,863.00
BELLE GLADE	BELLE GLADE WATER TREATMENT	UTILITY	$574,741.00
BOCA RATON	ATRIUM AT BOCA RATON, THE	ADULT LIVING	$6,763,831.00
BOCA RATON	OAKBRIDGE TERRACE AL RESIDENCE AT ST ANDREWS ESTATES	ADULT LIVING	$25,640,912.00
BOCA RATON	BOCA RATON AIRPORT	AIRPORT	$119,336,710.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #1	FIRE STATION	$2,884,268.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #2	FIRE STATION	$51,700.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #3	FIRE STATION	$8,974,393.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #4	FIRE STATION	$714,342.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #5	FIRE STATION	$1,376,163.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #6	FIRE STATION	$568,590.00

BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #7	FIRE STATION	$1,180,635.00
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #8	FIRE STATION	$2,005,559.00
BOCA RATON	BOCA RATON COMMUNITY	HOSPITAL	$49,772,820.00
BOCA RATON	BOCA RATON POLICE DEPARTMENT	LAW ENFORCEMENT	$9,083,891.00
BOCA RATON	AVANTE AT BOCA RATON	NURSING HOME	$5,183,621.00
BOCA RATON	BOCA RATON REHABILITATION CENTER	NURSING HOME	$3,710,077.00
BOCA RATON	FOUNTAINS NURSING HOME	NURSING HOME	$1,216,587.00
BOCA RATON	MANORCARE HEALTH SERVICES	NURSING HOME	$5,960,576.00
BOCA RATON	REGENTS PARK NURSING & REHABILITATION CENTER	NURSING HOME	$7,063,933.00
BOCA RATON	WILLOWBROOKE COURT AT ST. ANDREWS	NURSING HOME	$25,023,255.00
BOCA RATON	ADDISON MIZNER	SCHOOL	$121,260.00
BOCA RATON	BOCA RATON ELEMENTARY	SCHOOL	$7,185,808.00
BOCA RATON	BOCA RATON MIDDLE	SCHOOL	$16,985,529.00
BOCA RATON	CALUSA	SCHOOL	$6,339,251.00
BOCA RATON	DON ESTRIDGE	SCHOOL	$31,473,932.00
BOCA RATON	J.C. MITCHELL	SCHOOL	$16,298,950.00
BOCA RATON	OMNI	SCHOOL	$14,748,963.00
BOCA RATON	SPANISH RIVER	SCHOOL	$2,936,772.00
BOCA RATON	VERDE	SCHOOL	$6,696,522.00
BOCA RATON	BOCA RATON HIGH	SCHOOL/SHELTER	$0.00
BOCA RATON	BOCA RATON WATER TREATMENT	UTILITY	$28,818,078.00
BOCA RATON	HIGHLAND BEACH WATER TREATMENT	UTILITY	$1,636,951.00
BOYNTON BEACH	A NEW BEGINING ASSISTED LIVING, LLC	ADULT LIVING	$231,432.00
BOYNTON BEACH	BARRINGTON TERRACE OF BOYNTON BEACH	ADULT LIVING	$6,958,668.00
BOYNTON BEACH	BOYNTON BEACH ADULT LIVING	ADULT LIVING	$3,327,446.00
BOYNTON BEACH	DOREEN'S ASSISTED LIVING HOME	ADULT LIVING	$255,801.00
BOYNTON BEACH	GARDENS AT BOYNTON VILLAGE	ADULT LIVING	$5,903,468.00

BOYNTON BEACH	HOMEWOOD RESIDENCE AT BOYNTON BEACH	ADULT LIVING	$6,225,370.00
BOYNTON BEACH	PARKSIDE INN	ADULT LIVING	$909,097.00
BOYNTON BEACH	POINTE AT NEWPORT PLACE, THE	ADULT LIVING	$4,581,221.00
BOYNTON BEACH	RUSTIC RETREAT RETIREMENT HOME	ADULT LIVING	$680,620.00
BOYNTON BEACH	SIMPSON ADULT CARE FACILITY	ADULT LIVING	$133,776.00
BOYNTON BEACH	SUNRISE ADULT CARE II	ADULT LIVING	$215,816.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$11,791,682.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$587,189.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$1,813,965.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #4	FIRE STATION	$1,794,313.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #5	FIRE STATION	$2,378,370.00
BOYNTON BEACH	BETHESDA MEMORIAL	HOSPITAL	$74,408,025.00
BOYNTON BEACH	BOYNTON BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$11,791,682.00
BOYNTON BEACH	BARRINGTON TERRACE OF BOYNTON BEACH	NURSING HOME	$6,958,668.00
BOYNTON BEACH	BOULEVARD MANOR NURSING AND REHAB CENTER	NURSING HOME	$4,107,141.00
BOYNTON BEACH	HAMLIN PLACE	NURSING HOME	$3,627,559.00
BOYNTON BEACH	HEARTLAND HEALTH CARE CENTER - BOYNTON BEACH	NURSING HOME	$3,578,009.00
BOYNTON BEACH	MANORCARE HEALTH SERVICES BOYNTON BEACH	NURSING HOME	$5,972,114.00
BOYNTON BEACH	CITRUS COVE	SCHOOL	$6,004,573.00
BOYNTON BEACH	CONGRESS	SCHOOL	$10,244,805.00
BOYNTON BEACH	CROSSPOINTE	SCHOOL	$11,730,159.00
BOYNTON BEACH	FOREST PARK	SCHOOL	$5,340,559.00
BOYNTON BEACH	FREEDOM SHORES	SCHOOL	$10,520,458.00
BOYNTON BEACH	GALAXY	SCHOOL	$6,087,229.00
BOYNTON BEACH	POINCIANA	SCHOOL	$412,131.00
BOYNTON BEACH	ROLLING GREEN	SCHOOL	$11,496,893.00
BOYNTON BEACH	BOYNTON BEACH	SCHOOL/SHELTER	$8,188,679.00

BOYNTON BEACH	BOYNTON BEACH EAST WATER TREATMENT	UTILITY	$1,173,430.00
DELRAY BEACH	ABBEY DELRAY HEALTH CENTER	ADULT LIVING	$29,613,503.00
DELRAY BEACH	ASHLEY PLACE	ADULT LIVING	$239,202.00
DELRAY BEACH	SOUTH COUNTY MENTAL HEALTH CENTER, INC.	ADULT LIVING	$7,109,435.00
DELRAY BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$2,607,290.00
DELRAY BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$2,989,518.00
DELRAY BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$526,647.00
DELRAY BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #4	FIRE STATION	$39,903.00
DELRAY BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #5	FIRE STATION	$666,865.00
DELRAY BEACH	SOUTH COUNTY COURTHOUSE	GOVERNMENT	$12,129,812.00
DELRAY BEACH	DELRAY MEDICAL CENTER	HOSPITAL	$43,355,569.00
DELRAY BEACH	DELRAY BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$5,259,482.00
DELRAY BEACH	PALM BEACH COUNTY SHERIFF DISTRICT IV	LAW ENFORCEMENT	$9,919,059.00
DELRAY BEACH	HARBOURS EDGE	NURSING HOME	$41,610,620.00
DELRAY BEACH	HEALTH CENTER AT ABBEY DELRAY	NURSING HOME	$29,613,503.00
DELRAY BEACH	HEALTH CENTER AT ABBEY DELRAY SOUTH	NURSING HOME	$25,762,029.00
DELRAY BEACH	BANYAN CREEK	SCHOOL	$6,541,773.00
DELRAY BEACH	CARVER	SCHOOL	$12,036,686.00
DELRAY BEACH	ORCHARD VIEW	SCHOOL	$9,305,379.00
DELRAY BEACH	PINE GROVE	SCHOOL	$5,845,200.00
DELRAY BEACH	PLUMOSA	SCHOOL	$2,542,703.00
DELRAY BEACH	S.D. SPADY	SCHOOL	$12,183,277.00
DELRAY BEACH	VILLAGE ACADEMY	SCHOOL	$9,624,453.00
DELRAY BEACH	ATLANTIC HIGH	SCHOOL/SHELTER	$50,061,757.00
DELRAY BEACH	DELRAY BEACH WATER TREATMENT	UTILITY	$6,982,374.00
GREENACRES	ARBOR OAKS AT GREENACRES	ADULT LIVING	$4,522,583.00
GREENACRES	COTTAGES OF GREENACRES	ADULT LIVING	$3,351,648.00

GREENACRES	GREENACRES FIRE DEPARTMENT STATION #94	FIRE STATION	$6,028,767.00
GREENACRES	GREENACRES FIRE DEPARTMENT STATION #95	FIRE STATION	$6,028,767.00
GREENACRES	GREENACRES POLICE DEPARTMENT	LAW ENFORCEMENT	$6,028,767.00
GREENACRES	WOOD LAKE NURSING AND REHABILITATION CENTER	NURSING HOME	$4,058,970.00
GREENACRES	CHOLEE LAKE	SCHOOL	$11,466,924.00
GREENACRES	DIAMOND VIEW	SCHOOL	$14,010,766.00
GREENACRES	GREENACRES	SCHOOL	$7,999,301.00
GREENACRES	HERITAGE	SCHOOL	$12,225,777.00
GREENACRES	LC SWAIN	SCHOOL	$23,382,501.00
GREENACRES	LIBERTY PARK	SCHOOL	$11,149,825.00
GREENACRES	OKEEHEELEE	SCHOOL	$12,629,810.00
GREENACRES	TRADEWINDS	SCHOOL	$31,545,717.00
GREENACRES	JOHN I. LEONARD	SCHOOL/SHELTER	$40,463,849.00
GULF STREAM	GULFSTREAM POLICE DEPARTMENT	LAW ENFORCEMENT	$1,094,177.00
HAVERHILL	EL PINAR CARE CENTER, INC.	ADULT LIVING	$217,904.00
HAVERHILL	FAMILY RETIREMENT INN, INC.	ADULT LIVING	$0.00
HIGHLAND BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #6	FIRE STATION	$6,525,577.00
HIGHLAND BEACH	HIGHLAND BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$6,525,577.00
HYPOLUXO	MANALAPAN WATER TREATMENT	UTILITY	$424,881.00
JUNO BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #15	FIRE STATION	$792,490.00
JUNO BEACH	JUNO BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$2,104,882.00
JUNO BEACH	WATERFORD HEALTH CARE CENTER	NURSING HOME	$24,496,770.00
JUPITER	COURTYARD GARDENS OF JUPITER	ADULT LIVING	$7,731,724.00
JUPITER	MANGROVE BAY	ADULT LIVING	$15,731,344.00
JUPITER	MORNING STAR OF JUPITER INC #2	ADULT LIVING	$325,781.00
JUPITER	MORNING STAR OF JUPITER, INC.	ADULT LIVING	$193,562.00
JUPITER	ST JOSEPH'S ASSISTED LIVING	ADULT LIVING	$5,000,000.00

JUPITER	PALM BEACH COUNTY FIRE RESCUE STATION #16	FIRE STATION	$974,679.00
JUPITER	PALM BEACH COUNTY FIRE RESCUE STATION #18	FIRE STATION	$4,576,326.00
JUPITER	PALM BEACH COUNTY FIRE RESCUE STATION #19	FIRE STATION	$291,905.00
JUPITER	JUPITER MEDICAL CENTER	HOSPITAL	$33,820,959.00
JUPITER	JUPITER PD	LAW ENFORCEMENT	$20,070,469.00
JUPITER	JUPITER CARE CENTER	NURSING HOME	$3,432,364.00
JUPITER	JUPITER MEDICAL CENTER PAVILION INC	NURSING HOME	$6,372,706.00
JUPITER	BEACON COVE	SCHOOL	$10,065,593.00
JUPITER	JERRY THOMAS	SCHOOL	$10,585,387.00
JUPITER	JUPITER MIDDLE	SCHOOL	$11,745,241.00
JUPITER	JUPITER ELEMENTARY	SCHOOL	$11,364,324.00
JUPITER	JUPITER HIGH	SCHOOL	$44,806,719.00
JUPITER	LIGHTHOUSE	SCHOOL	$6,850,622.00
JUPITER	LIMESTONE CREEK	SCHOOL	$10,453,135.00
JUPITER	INDEPENDENCE	SCHOOL/SHELTER	$10,960,651.00
JUPITER	JUPITER WATER TREATMENT	UTILITY	$4,767,040.00
JUPITER INLET COLONY	JUPITER INLET COLONY POLICE DEPARTMENT	LAW ENFORCEMENT	$58,452.00
LAKE CLARKE SHORES	LAKE CLARKE SHORES POLICE DEPARTMENT	LAW ENFORCEMENT	$499,288.00
LAKE PARK	TROPICAL PALM ASSISTED	ADULT LIVING	$230,462.00
LAKE PARK	PALM BEACH COUNTY FIRE RESCUE STATION #68	FIRE STATION	$1,392,767.00
LAKE PARK	PALM BEACH COUNTY SHERIFF DISTRICT X	LAW ENFORCEMENT	$3,024,682.00
LAKE PARK	NORTH LAKE REHABILITATION AND HEALTH CENTER	NURSING HOME	$1,808,730.00
LAKE PARK	LAKE PARK	SCHOOL	$929,197.00
LAKE WORTH	CREST MANOR ASSISTED LIVING FACILITY	ADULT LIVING	$745,173.00
LAKE WORTH	NUESTRA CASA	ADULT LIVING	$237,292.00
LAKE WORTH	TROPICAL GARDEN VILLAS INC. (ANNEX)	ADULT LIVING	$210,438.00
LAKE WORTH	TROPICAL GARDEN VILLAS INC. (HOME)	ADULT LIVING	$210,438.00

LAKE WORTH	LAKE WORTH FIRE DEPARTMENT STATION #91	FIRE STATION	$6,471,068.00
LAKE WORTH	LAKE WORTH FIRE DEPARTMENT STATION #93	FIRE STATION	$421,386.00
LAKE WORTH	PALM BEACH COUNTY SHERIFF DISTRICT XIV	LAW ENFORCEMENT	$6,471,068.00
LAKE WORTH	AVANTE AT LAKE WORTH, INC.	NURSING HOME	$3,416,962.00
LAKE WORTH	LAKE WORTH MANOR	NURSING HOME	$4,048,109.00
LAKE WORTH	MEDICANA NURSING AND REHAB CENTER	NURSING HOME	$1,839,940.00
LAKE WORTH	TERRACES OF LAKE WORTH REHABILITATION AND HEALTH CENTER	NURSING HOME	$2,024,664.00
LAKE WORTH	BARTON	SCHOOL	$2,917,474.00
LAKE WORTH	HIGHLAND	SCHOOL	$11,820,781.00
LAKE WORTH	LAKE WORTH HIGH	SCHOOL	$25,315,485.00
LAKE WORTH	LAKE WORTH MIDDLE	SCHOOL	$10,597,470.00
LAKE WORTH	NORTH GRADE	SCHOOL	$277,200.00
LAKE WORTH	SOUTH GRADE	SCHOOL	$8,116,488.00
LAKE WORTH	LAKE WORTH MUNICIPAL WATER TREATMENT	UTILITY	$4,294,097.00
LANTANA	PALM BEACH CLUB, LLC	ADULT LIVING	$29,000,000.00
LANTANA	PALM BEACH COUNTY FIRE RESCUE STATION #37	FIRE STATION	$3,333,004.00
LANTANA	A G HOLLEY STATE	HOSPITAL	$39,127,458.00
LANTANA	FLORIDA HIGHWAY PATROL TROOP L	LAW ENFORCEMENT	$39,127,458.00
LANTANA	LANTANA POLICE DEPARTMENT	LAW ENFORCEMENT	$3,333,004.00
LANTANA	LANTANA ELEMENTARY	SCHOOL	$10,891,698.00
LANTANA	LANTANA MIDDLE	SCHOOL	$16,088,327.00
LANTANA	LANTANA WATER TREATMENT	UTILITY	$3,333,004.00
LOXAHATCHEE GROVES	PALM BEACH COUNTY FIRE RESCUE STATION #21	FIRE STATION	$841,883.00
LOXAHATCHEE GROVES	LOXAHATCHEE GROVES	SCHOOL	$5,926,736.00
MANALAPAN	PALM BEACH COUNTY FIRE RESCUE STATION #38	FIRE STATION	$1,133,311.00
MANALAPAN	MANALAPAN POLICE DEPARTMENT	LAW ENFORCEMENT	$1,133,311.00

MANGONIA PARK	MANGONIA PARK POLICE DEPARTMENT	LAW ENFORCEMENT	$1,134,878.00
NORTH PALM BEACH	NORTH PALM BEACH FIRE DEPARTMENT #67	FIRE STATION	$3,361,323.00
NORTH PALM BEACH	NORTH PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$3,361,323.00
NORTH PALM BEACH	NORTH PALM BEACH	SCHOOL	$2,655,928.00
OCEAN RIDGE	OCEAN RIDGE FIRE DEPARTMENT	FIRE STATION	$1,401,240.00
OCEAN RIDGE	OCEAN RIDGE POLICE DEPARTMENT	LAW ENFORCEMENT	$1,401,240.00
PAHOKEE	PALM BEACH COUNTY FIRE RESCUE STATION #72	FIRE STATION	$784,921.00
PAHOKEE	PALM BEACH COUNTY SHERIFF DISTRICT XII	LAW ENFORCEMENT	$410,952.00
PAHOKEE	GLADES HEALTH CARE CENTER	NURSING HOME	$1,734,078.00
PAHOKEE	PAHOKEE	SCHOOL	$2,438,757.00
PAHOKEE	PAHOKEE MIDDLE / HIGH	SCHOOL	$11,566,413.00
PAHOKEE	PAHOKEE	UTILITY	$410,952.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$5,275,979.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$2,368,745.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$23,230,865.00
PALM BEACH	PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$7,565,782.00
PALM BEACH	PALM BEACH PUBLIC	SCHOOL	$12,421,456.00
PALM BEACH GARDENS	CHATSWORTH AT PGA NATIONAL	ADULT LIVING	$6,856,348.00
PALM BEACH GARDENS	EMMANUEL CARE ALF, INC	ADULT LIVING	$276,353.00
PALM BEACH GARDENS	INN AT LA POSADA	ADULT LIVING	$40,806,279.00
PALM BEACH GARDENS	PROSPERITY OAKS	ADULT LIVING	$20,723,717.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #61	FIRE STATION	$12,430,908.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #62	FIRE STATION	$872,691.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #63	FIRE STATION	$2,975,818.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #64	FIRE STATION	$867,013.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #65	FIRE STATION	$0.00
PALM BEACH GARDENS	NORTH COUNTY COURTHOUSE	GOVERNMENT	$23,641,417.00

PALM BEACH GARDENS	PALM BEACH GARDENS MEDICAL CENTER	HOSPITAL	$20,000,000.00
PALM BEACH GARDENS	PALM BEACH GARDENS POLICE DEPARTMENT	LAW ENFORCEMENT	$12,430,908.00
PALM BEACH GARDENS	CHATSWORTH AT PGA NATIONAL	NURSING HOME	$6,856,348.00
PALM BEACH GARDENS	GARDENS COURT	NURSING HOME	$7,890,186.00
PALM BEACH GARDENS	HEARTLAND HEALTH CARE CENTER - PROSPERITY OAKS	NURSING HOME	$3,787,592.00
PALM BEACH GARDENS	NURSING CENTER AT LA POSADA, THE	NURSING HOME	$40,806,279.00
PALM BEACH GARDENS	ALLAMANDA	SCHOOL	$4,982,710.00
PALM BEACH GARDENS	HOWELL L. WATKINS	SCHOOL	$8,924,221.00
PALM BEACH GARDENS	MARSH POINTE	SCHOOL	$6,540,000.00
PALM BEACH GARDENS	PALM BEACH GARDENS ELEMENTARY	SCHOOL	$3,581,566.00
PALM BEACH GARDENS	PALM BEACH GARDENS HIGH	SCHOOL	$19,376,514.00
PALM BEACH GARDENS	TIMBER TRACE	SCHOOL	$21,676,687.00
PALM BEACH GARDENS	WATSON B. DUNCAN	SCHOOL	$21,676,687.00
PALM BEACH GARDENS	WILLIAM T. DWYER	SCHOOL/SHELTER	$27,921,562.00
PALM BEACH GARDENS	SEACOAST UTILITY HOOD ROAD WATER TREATMENT	UTILITY	$7,755,073.00
PALM BEACH SHORES	PALM BEACH SHORES FIRE DEPARTMENT	FIRE STATION	$6,395,575.00
PALM BEACH SHORES	PALM BEACH SHORES PD	LAW ENFORCEMENT	$6,395,575.00
PALM SPRINGS	PALM BEACH COUNTY FIRE RESCUE STATION #31	FIRE STATION	$144,492.00
PALM SPRINGS	PALM SPRINGS FIRE DEPARTMENT	FIRE STATION	$8,753,582.00
PALM SPRINGS	PALM SPRINGS POLICE DEPARTMENT	LAW ENFORCEMENT	$8,753,582.00
PALM SPRINGS	CLIFFORD O. TAYLOR / KIRKLANE	SCHOOL	$6,366,872.00
PALM SPRINGS	PALM SPRINGS ELEMENTARY	SCHOOL	$11,878,952.00
PALM SPRINGS	PALM SPRINGS MIDDLE	SCHOOL	$132,566.00
PALM SPRINGS	PALM SPRINGS WATER TREATMENT	UTILITY	$1,188,102.00
RIVIERA BEACH	GOLDEN YEARS ADULT LIVING	ADULT LIVING	$148,839.00
RIVIERA BEACH	HARBOR HOUSE RESORT	ADULT LIVING	$460,681.00

RIVIERA BEACH	HOWARD HOUSE	ADULT LIVING	$152,059.00
RIVIERA BEACH	MILLS ASSISTED LIVING FACILITY	ADULT LIVING	$159,320.00
RIVIERA BEACH	PALMS EDGE	ADULT LIVING	$2,890,714.00
RIVIERA BEACH	SEAGULL PLACE	ADULT LIVING	$437,105.00
RIVIERA BEACH	RIVIERA BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$7,077,409.00
RIVIERA BEACH	RIVIERA BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$1,778,976.00
RIVIERA BEACH	RIVIERA BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$3,027,557.00
RIVIERA BEACH	RIVIERA BEACH FIRE DEPARTMENT STATION #4	FIRE STATION	$1,555,018.00
RIVIERA BEACH	KINDRED HOSPITAL OF THE PALM BEACHES	HOSPITAL	$2,600,895.00
RIVIERA BEACH	VA MEDICAL CENTER	HOSPITAL	$1,555,018.00
RIVIERA BEACH	RIVIERA BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$7,077,409.00
RIVIERA BEACH	PORT OF PALM BEACH	PORT	$3,960,408.00
RIVIERA BEACH	JOHN F. KENNEDY	SCHOOL	$15,570,159.00
RIVIERA BEACH	LINCOLN	SCHOOL	$5,915,152.00
RIVIERA BEACH	SUNCOAST	SCHOOL	$8,505,336.00
RIVIERA BEACH	WASHINGTON	SCHOOL	$4,446,062.00
RIVIERA BEACH	WEST RIVIERA	SCHOOL	$6,133,949.00
RIVIERA BEACH	DR MARY McLEOD BETHUNE	SCHOOL/SHELTER	$9,554,070.00
RIVIERA BEACH	RIVIERA BEACH WATER DEPT.	UTILITY	$3,466,467.00
ROYAL PALM BEACH	CASSIE'S CASTLE	ADULT LIVING	$238,466.00
ROYAL PALM BEACH	MEADOWLARK INN	ADULT LIVING	$221,082.00
ROYAL PALM BEACH	ORANGE BLOSSOMS VILLA	ADULT LIVING	$203,285.00
ROYAL PALM BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #28	FIRE STATION	$9,050,098.00
ROYAL PALM BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #29	FIRE STATION	$485,685.00
ROYAL PALM BEACH	PALM BEACH COUNTY SHERIFF DISTRICT IX	LAW ENFORCEMENT	$9,050,098.00
ROYAL PALM BEACH	ROYAL MANOR	NURSING HOME	$4,334,863.00
ROYAL PALM BEACH	CRESTWOOD	SCHOOL	$9,898,169.00

ROYAL PALM BEACH	CYPRESS TRAILS	SCHOOL	$6,024,553.00
ROYAL PALM BEACH	H.L. JOHNSON	SCHOOL	$6,446,044.00
ROYAL PALM BEACH	ROYAL PALM BEACH ELEMENTARY	SCHOOL	$10,875,172.00
ROYAL PALM BEACH	ROYAL PALM BEACH HIGH	SCHOOL	$39,304,062.00
ROYAL PALM BEACH	ROYAL PALM BEACH WASTE WATER TREATMENT	UTILITY	$12,371,800.00
ROYAL PALM BEACH	ROYAL PALM BEACH WATER TREATMENT	UTILITY	$1,349,946.00
SOUTH BAY	PALM BEACH COUNTY FIRE RESCUE STATION #74	FIRE STATION	$898,711.00
SOUTH BAY	ROSENWALD	SCHOOL	$4,029,995.00
SOUTH BAY	SOUTH BAY WASTE WATER TREATMENT	UTILITY	$63,859.00
SOUTH BAY	SOUTH BAY WATER TREATMENT	UTILITY	$398,048.00
SOUTH PALM BEACH	SOUTH PALM BEACH PD	LAW ENFORCEMENT	$1,947,102.00
TEQUESTA	CLARE BRIDGE OF TEQUESTA	ADULT LIVING	$2,360,000.00
TEQUESTA	STERLING HOUSE OF TEQUESTA	ADULT LIVING	$2,360,000.00
TEQUESTA	TERRACE COMMUNITIES TEQUESTA , LLC	ADULT LIVING	$7,693,231.00
TEQUESTA	PALM BEACH COUNTY FIRE RESCUE STATION #11	FIRE STATION	$281,656.00
TEQUESTA	TEQUESTA	FIRE STATION	$4,745,508.00
TEQUESTA	TEQUESTA PD	LAW ENFORCEMENT	$4,745,508.00
TEQUESTA	TEQUESTA WELL FIELD 1 PUMP	UTILITY	$1,477,678.00
TEQUESTA	TEQUESTA WATER TREATMENT	UTILITY	$1,529,130.00
WELLINGTON	A HOME FOR ME, INC	ADULT LIVING	$266,858.00
WELLINGTON	GOLDENCARE OF WELLINGTON, INC.	ADULT LIVING	$350,107.00
WELLINGTON	RESIDENCE AT PADDOCK PARK	ADULT LIVING	$247,554.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #20	FIRE STATION	$718,038.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #25	FIRE STATION	$625,370.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #27	FIRE STATION	$546,419.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #30	FIRE STATION	$882,142.00
WELLINGTON	WELLINGTON REGIONAL MEDICAL CENTER	HOSPITAL	$29,049,326.00

WELLINGTON	PALM BEACH COUNTY SHERIFF DISTRICT VIII	LAW ENFORCEMENT	$6,000,000.00
WELLINGTON	BINKS FOREST	SCHOOL	$13,123,925.00
WELLINGTON	ELBRIDGE GALE	SCHOOL	$3,277,054.00
WELLINGTON	EMERALD COVE	SCHOOL	$10,891,644.00
WELLINGTON	EQUESTRIAN TRAILS	SCHOOL	$16,917,723.00
WELLINGTON	NEW HORIZONS	SCHOOL	$5,496,729.00
WELLINGTON	POLO PARK	SCHOOL	$19,643,835.00
WELLINGTON	WELLINGTON HIGH	SCHOOL	$23,173,285.00
WELLINGTON	WELLINGTON ELEMENTARY	SCHOOL	$6,034,541.00
WELLINGTON	WELLINGTON LANDINGS	SCHOOL	$13,585,849.00
WELLINGTON	PALM BEACH CENTRAL	SCHOOL/SHELTER	$39,674,385.00
WELLINGTON	POTABLE WATER	UTILITY	$4,260,423.00
WELLINGTON	VILLAGE OF WELLINGTON WASTE WATER TREATMENT	UTILITY	$9,259,508.00
WELLINGTON	VILLAGE OF WELLINGTON WATER TREATMENT	UTILITY	$4,260,423.00
WEST PALM BEACH	ARDEN COURTS OF WEST PALM BEACH	ADULT LIVING	$7,879,246.00
WEST PALM BEACH	B P ASSISTED LIVING	ADULT LIVING	$245,088.00
WEST PALM BEACH	DOREEN'S ADULT LIVING	ADULT LIVING	$432,593.00
WEST PALM BEACH	FOUNTAINVIEW	ADULT LIVING	$13,700,000.00
WEST PALM BEACH	GARDEN VILLAS	ADULT LIVING	$484,695.00
WEST PALM BEACH	IT'S JUST LIKE HOME	ADULT LIVING	$136,165.00
WEST PALM BEACH	LOURDES PAVILION	ADULT LIVING	$31,349,832.00
WEST PALM BEACH	MARRIOTT HOME CARE	ADULT LIVING	$343,808.00
WEST PALM BEACH	MI CASA ES TU CASA #2	ADULT LIVING	$241,171.00
WEST PALM BEACH	PALM BEACH ASSISTED LIVING FACILITY	ADULT LIVING	$3,643,464.00
WEST PALM BEACH	SAVANNAH COURT OF THE PALM BEACHES	ADULT LIVING	$6,005,834.00
WEST PALM BEACH	ST MARY'S ASSISTED LIVING FACILITY	ADULT LIVING	$975,033.00
WEST PALM BEACH	TRADITION OF THE PALM BEACHES	ADULT LIVING	$25,301,615.00

WEST PALM BEACH	WINDSOR COURT	ADULT LIVING	$2,389,315.00
WEST PALM BEACH	WIZE CHOICE	ADULT LIVING	$467,985.00
WEST PALM BEACH	WYNDHAM HOUSE	ADULT LIVING	$550,999.00
WEST PALM BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #17	FIRE STATION	$2,054,344.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$3,767,202.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$2,744,185.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$2,706,451.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #4	FIRE STATION	$3,756,702.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #5	FIRE STATION	$672,258.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #6	FIRE STATION	$620,146.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #7	FIRE STATION	$1,181,594.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #8	FIRE STATION	$1,172,982.00
WEST PALM BEACH	CRIMINAL JUSTICE BLDG	GOVERNMENT	$29,529,660.00
WEST PALM BEACH	FOURTH DISTRICT COURT OF APPEALS	GOVERNMENT	$7,072,191.00
WEST PALM BEACH	GOVERNMENTAL CENTER	GOVERNMENT	$58,993,605.00
WEST PALM BEACH	MAIN COURTHOUSE	GOVERNMENT	$141,088,099.00
WEST PALM BEACH	PAUL G ROGERS FEDERAL BLDG	GOVERNMENT	$29,683,378.00
WEST PALM BEACH	COLUMBIA	HOSPITAL	$14,875,656.00
WEST PALM BEACH	GOOD SAMARITAN MEDICAL CENTER	HOSPITAL	$32,000,000.00
WEST PALM BEACH	OAKWOOD CENTER OF THOSPITALE PALM BEACHOSPITALES, INC.	HOSPITAL	$6,212,989.00
WEST PALM BEACH	ST MARY'S MEDICAL CENTER	HOSPITAL	$53,781,947.00
WEST PALM BEACH	PALM BEACH COUNTY SHERIFF DISTRICT III	LAW ENFORCEMENT	$2,054,344.00
WEST PALM BEACH	WEST PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$23,187,520.00
WEST PALM BEACH	DARCY HALL OF LIFE CARE	NURSING HOME	$5,456,603.00
WEST PALM BEACH	EDWARD J. HEALEY REHABILITATION AND NURSING CENTER	NURSING HOME	$7,281,254.00
WEST PALM BEACH	JOSEPH L MORSE GERIATRIC CENTER INC	NURSING HOME	$13,027,454.00

WEST PALM BEACH	LAKESIDE HEALTH CENTER	NURSING HOME	$3,095,033.00
WEST PALM BEACH	LOURDES-NOREEN MCKEEN RESIDENCE FOR GERIATRIC CARE, INC.	NURSING HOME	$31,349,832.00
WEST PALM BEACH	MANORCARE HEALTH SERVICES WEST PALM BEACH	NURSING HOME	$7,879,246.00
WEST PALM BEACH	PALM GARDEN OF WEST PALM BEACH	NURSING HOME	$5,802,782.00
WEST PALM BEACH	REHALABILITATION CENTER OF THE PALM BEACHES	NURSING HOME	$4,966,513.00
WEST PALM BEACH	SAVANNA COVE	NURSING HOME	$6,005,834.00
WEST PALM BEACH	A.W. DREYFOOS HIGH SCHOOL OF THE ARTS	SCHOOL	$29,718,687.00
WEST PALM BEACH	BAK MIDDLE SCHOOL OF THE ARTS	SCHOOL	$19,211,081.00
WEST PALM BEACH	BEAR LAKES	SCHOOL	$17,270,153.00
WEST PALM BEACH	BELVEDERE	SCHOOL	$9,206,675.00
WEST PALM BEACH	CONNISTON	SCHOOL	$19,579,247.00
WEST PALM BEACH	EGRET LAKE	SCHOOL	$6,439,434.00
WEST PALM BEACH	GRASSY WATERS	SCHOOL	$11,836,291.00
WEST PALM BEACH	INDIAN RIDGE LEARNING CENTER	SCHOOL	$14,904,444.00
WEST PALM BEACH	JEAGA	SCHOOL	$21,669,421.00
WEST PALM BEACH	NORTHBORO	SCHOOL	$3,896,791.00
WEST PALM BEACH	NORTHMORE	SCHOOL	$9,480,106.00
WEST PALM BEACH	PALM BEACH LAKES	SCHOOL	$22,901,573.00
WEST PALM BEACH	PALMETTO	SCHOOL	$5,136,819.00
WEST PALM BEACH	PLEASANT CITY	SCHOOL	$6,277,815.00
WEST PALM BEACH	ROOSEVELT ELEMENTARY	SCHOOL	$23,325,267.00
WEST PALM BEACH	ROOSEVELT MIDDLE	SCHOOL	$23,325,267.00
WEST PALM BEACH	SOUTH OLIVE	SCHOOL	$9,832,374.00
WEST PALM BEACH	U.B. KINSEY / PALMVIEW	SCHOOL	$10,169,641.00
WEST PALM BEACH	WESTWARD	SCHOOL	$4,152,285.00
WEST PALM BEACH	FOREST HILL	SCHOOL/SHELTER	$35,130,044.00

WEST PALM BEACH	WPB WATER TREATMENT	UTILITY	$8,669,182.00
UNINCORPORATED	A COUNTRY RESIDENCE	ADULT LIVING	$373,747.00
UNINCORPORATED	AAVALON OF PALM BEACH	ADULT LIVING	$4,230,247.00
UNINCORPORATED	ADULT LIVING HOME ASSISTED LIVING PLUS MORE	ADULT LIVING	$206,973.00
UNINCORPORATED	ARDEN COURTS OF DELRAY BEACH	ADULT LIVING	$8,955,804.00
UNINCORPORATED	ASSISTED LIVING OF PALM BEACH GARDENS, INC	ADULT LIVING	$374,547.00
UNINCORPORATED	ATLANTIS ASSISTED LIVING	ADULT LIVING	$2,573,016.00
UNINCORPORATED	ATRIA MERIDIAN	ADULT LIVING	$9,451,409.00
UNINCORPORATED	AVERY COTTAGE, INC.	ADULT LIVING	$167,580.00
UNINCORPORATED	AVOCADO SHADES, INC	ADULT LIVING	$358,545.00
UNINCORPORATED	B P ASSISTED LIVING FACILITY II	ADULT LIVING	$199,700.00
UNINCORPORATED	BRIGHTON GARDENS OF BOCA RATON	ADULT LIVING	$36,472,535.00
UNINCORPORATED	CARING HANDS AT ACREAGE, INC	ADULT LIVING	$453,612.00
UNINCORPORATED	CHRISTEL CARE INC	ADULT LIVING	$195,543.00
UNINCORPORATED	CLASSIC RESIDENCE BY HYATT AT LAKESIDE VILLAGE	ADULT LIVING	$0.00
UNINCORPORATED	COLONIAL INN, LLC	ADULT LIVING	$1,860,361.00
UNINCORPORATED	COUNTRY RETREAT	ADULT LIVING	$387,792.00
UNINCORPORATED	CRESTHAVEN EAST	ADULT LIVING	$6,201,107.00
UNINCORPORATED	FINNISH-AMERICAN REST HOME, INC.	ADULT LIVING	$6,072,674.00
UNINCORPORATED	HERITAGE PARK EAST, LLC	ADULT LIVING	$6,351,339.00
UNINCORPORATED	HERON'S RUN	ADULT LIVING	$0.00
UNINCORPORATED	HIDDEN GARDEN	ADULT LIVING	$318,649.00
UNINCORPORATED	HIDDEN PINES A.L.F., INC.	ADULT LIVING	$266,093.00
UNINCORPORATED	HOMEWOOD RESIDENCE AT BOCA RATON	ADULT LIVING	$5,088,811.00
UNINCORPORATED	HOMEWOOD RESIDENCE AT DELRAY BEACH	ADULT LIVING	$5,549,128.00
UNINCORPORATED	INN AT CASA DEL MAR	ADULT LIVING	$19,156,498.00
UNINCORPORATED	JOY OF LIVING CARE SERVICES	ADULT LIVING	$160,250.00

UNINCORPORATED	LEE RESIDENCE	ADULT LIVING	$540,572.00
UNINCORPORATED	LOVING WITH CARE INC	ADULT LIVING	$441,502.00
UNINCORPORATED	OAKBRIDGE TERRACE AL RESIDENCE AT EDGEWATER POINTE EST.	ADULT LIVING	$36,185,684.00
UNINCORPORATED	PERSONAL ELDER CARE	ADULT LIVING	$181,598.00
UNINCORPORATED	PERSONAL ELDER CARE II	ADULT LIVING	$188,786.00
UNINCORPORATED	PLEASANT RETIREMENT HOME INC.	ADULT LIVING	$201,664.00
UNINCORPORATED	PREFERRED LIFESTYLE	ADULT LIVING	$260,881.00
UNINCORPORATED	SUMMERVILLE AT BOYNTON BEACH	ADULT LIVING	$10,715,440.00
UNINCORPORATED	SUNRISE ADULT CARE	ADULT LIVING	$190,418.00
UNINCORPORATED	TERRACE AT WEST PALM BEACH	ADULT LIVING	$20,437,452.00
UNINCORPORATED	TRINITY CARE ASSISTED LIVING FACILITY	ADULT LIVING	$178,807.00
UNINCORPORATED	TYVAL ASSISTED LIVING FACILITY, LLC	ADULT LIVING	$189,306.00
UNINCORPORATED	VILLA OF KINGS & QUEENS OF DELRAY BEACH	ADULT LIVING	$468,172.00
UNINCORPORATED	WHITE PALMS	ADULT LIVING	$328,447.00
UNINCORPORATED	WHITEHALL BOCA RATON	ADULT LIVING	$8,642,874.00
UNINCORPORATED	YANIRI ASSISTED L IVING FACILITY	ADULT LIVING	$341,496.00
UNINCORPORATED	NORTH PALM BEACH COUNTY GENERAL AVIATION	AIRPORT	$30,548,545.00
UNINCORPORATED	PALM BEACH COUNTY GLADES AIRPORT	AIRPORT	$0.00
UNINCORPORATED	PALM BEACH COUNTY PARK	AIRPORT	$54,375,512.00
UNINCORPORATED	PALM BEACH INTERNATIONAL AIRPORT	AIRPORT	$259,457,962.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #14	FIRE STATION	$398,703.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #22	FIRE STATION	$8,000,000.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #23	FIRE STATION	$2,569,719.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #24	FIRE STATION	$408,126.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #26	FIRE STATION	$507,516.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #32	FIRE STATION	$664,046.00

UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #33	FIRE STATION	$9,060,602.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #34	FIRE STATION	$959,700.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #35	FIRE STATION	$11,238,633.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #36	FIRE STATION	$668,086.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #41	FIRE STATION	$776,965.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #42	FIRE STATION	$2,653,609.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #44	FIRE STATION	$949,000.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #45	FIRE STATION	$774,363.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #46	FIRE STATION	$759,069.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #47	FIRE STATION	$1,533,087.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #48	FIRE STATION	$1,807,243.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #51	FIRE STATION	$522,074.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #52	FIRE STATION	$361,823.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #53	FIRE STATION	$1,144,453.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #54	FIRE STATION	$631,896.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #55	FIRE STATION	$755,977.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #56	FIRE STATION	$263,114.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #57	FIRE STATION	$1,510,609.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #58	FIRE STATION	$589,208.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #81	FIRE STATION	$259,457,962.00
UNINCORPORATED	GUN CLUB ROAD COURT LOCATION	GOVERNMENT	$137,358,713.00
UNINCORPORATED	PALM BEACH COUNTY EOC	GOVERNMENT	$12,554,898.00
UNINCORPORATED	WEST COUNTY COURTHOUSE	GOVERNMENT	$14,888,853.00
UNINCORPORATED	WEST COUNTY ADMINISTRATION BLDG	GOVERNMENT	$1,913,673.00
UNINCORPORATED	PALMS WEST	HOSPITAL	$28,774,077.00
UNINCORPORATED	SELECT SPECIALTY HOSPITAL-PALM BEACH, INC	HOSPITAL	$9,483,195.00
UNINCORPORATED	WEST BOCA MEDICAL CENTER	HOSPITAL	$22,481,463.00

UNINCORPORATED	FLORIDA HIGHWAY PATROL TROOP K	LAW ENFORCEMENT	$6,301,912.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT II	LAW ENFORCEMENT	$259,457,962.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT V	LAW ENFORCEMENT	$14,888,853.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT VI	LAW ENFORCEMENT	$543,555.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT VII	LAW ENFORCEMENT	$1,144,453.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT VII M	LAW ENFORCEMENT	$2,765,578.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF HEADQUARTERS	LAW ENFORCEMENT	$137,358,713.00
UNINCORPORATED	AMERICAN-FINNISH NURSING HOME	NURSING HOME	$6,072,674.00
UNINCORPORATED	AZALEA COURT	NURSING HOME	$3,188,109.00
UNINCORPORATED	BOYNTON BEACH REHABILITATION CENTER	NURSING HOME	$6,526,815.00
UNINCORPORATED	BOYNTON HEALTH CARE CENTER	NURSING HOME	$3,513,754.00
UNINCORPORATED	CLASSIC RESIDENCE BY HYATT AT LAKESIDE VILLAGE	NURSING HOME	$0.00
UNINCORPORATED	CONSULATE HEALTH CARE OF WEST PALM BEACH	NURSING HOME	$3,572,157.00
UNINCORPORATED	CORAL BAY HEALTHCARE AND REHABILITATION	NURSING HOME	$0.00
UNINCORPORATED	CROSSINGS, THE	NURSING HOME	$4,236,012.00
UNINCORPORATED	HEARTLAND HEALTH CARE & REHAB CENTER - BOCA RATON	NURSING HOME	$4,585,343.00
UNINCORPORATED	LAKE VIEW CARE CENTER AT DELRAY	NURSING HOME	$3,672,551.00
UNINCORPORATED	LIBERTY INN, LLC	NURSING HOME	$11,532,913.00
UNINCORPORATED	MANORCARE HEALTH SERVICES	NURSING HOME	$8,955,804.00
UNINCORPORATED	MENORAH HOUSE	NURSING HOME	$3,746,403.00
UNINCORPORATED	SIGNATURE HEALTH CARE OF PALM BEACH	NURSING HOME	$3,709,017.00
UNINCORPORATED	STRATFORD COURT OF BOCA RATON	NURSING HOME	$36,472,535.00
UNINCORPORATED	WHITEHALL BOCA RATON	NURSING HOME	$8,642,874.00
UNINCORPORATED	WILLOWBROOKE COURT AT EDGEWATER POINTE ESTATES	NURSING HOME	$36,185,684.00
UNINCORPORATED	ACREAGE PINES	SCHOOL	$6,148,248.00
UNINCORPORATED	ADULT EDUCATION CENTER	SCHOOL	$3,944,577.00

UNINCORPORATED	BENOIST FARMS	SCHOOL	$14,150,180.00
UNINCORPORATED	BERKSHIRE	SCHOOL	$14,228,391.00
UNINCORPORATED	CHRISTA McAULIFFE	SCHOOL	$508,868.00
UNINCORPORATED	CORAL REEF	SCHOOL	$11,852,417.00
UNINCORPORATED	CORAL SUNSET	SCHOOL	$11,023,107.00
UNINCORPORATED	CRYSTAL LAKES	SCHOOL	$8,011,679.00
UNINCORPORATED	DEL PRADO	SCHOOL	$6,997,363.00
UNINCORPORATED	DISCOVERY KEY	SCHOOL	$9,848,622.00
UNINCORPORATED	DWIGHT D. EISENHOWER	SCHOOL	$3,798,491.00
UNINCORPORATED	EAGLES LANDING	SCHOOL	$574,750.00
UNINCORPORATED	FOREST HILL	SCHOOL	$8,584,778.00
UNINCORPORATED	FRONTIER	SCHOOL	$9,656,300.00
UNINCORPORATED	GOLDEN GROVE	SCHOOL	$52,305.00
UNINCORPORATED	GROVE PARK	SCHOOL	$5,053,586.00
UNINCORPORATED	HAGEN ROAD	SCHOOL	$6,345,051.00
UNINCORPORATED	HAMMOCK POINTE	SCHOOL	$11,554,847.00
UNINCORPORATED	HIDDEN OAKS	SCHOOL	$19,602,183.00
UNINCORPORATED	INDIAN PINES	SCHOOL	$9,282,958.00
UNINCORPORATED	JUPITER FARMS	SCHOOL	$5,284,279.00
UNINCORPORATED	K.E. CUNNINGHAM / CANAL POINT	SCHOOL	$5,575,764.00
UNINCORPORATED	LOGGERS RUN	SCHOOL	$12,710,962.00
UNINCORPORATED	MANATEE	SCHOOL	$8,474,829.00
UNINCORPORATED	MEADOW PARK	SCHOOL	$10,700,731.00
UNINCORPORATED	MELALEUCA	SCHOOL	$5,077,494.00
UNINCORPORATED	MORIKAMI PARK	SCHOOL	$10,662,334.00
UNINCORPORATED	ODYSSEY	SCHOOL	$12,947,066.00
UNINCORPORATED	OLYMPIC HEIGHTS	SCHOOL	$28,200,318.00

UNINCORPORATED	OSCEOLA CREEK	SCHOOL	$18,082,003.00
UNINCORPORATED	PANTHER RUN	SCHOOL	$10,354,528.00
UNINCORPORATED	PIERCE HAMMOCK	SCHOOL	$11,700,205.00
UNINCORPORATED	PINE JOG (03-Y)	SCHOOL	$661,521.00
UNINCORPORATED	ROYAL PALM SCHOOL	SCHOOL	$42,538,965.00
UNINCORPORATED	SANDPIPER SHORES	SCHOOL	$11,508,210.00
UNINCORPORATED	SANTALUCES	SCHOOL	$42,538,965.00
UNINCORPORATED	SEMINOLE TRAILS	SCHOOL	$6,198,602.00
UNINCORPORATED	STARLIGHT COVE	SCHOOL	$12,035,111.00
UNINCORPORATED	SUNRISE PARK	SCHOOL	$13,533,931.00
UNINCORPORATED	SUNSET PALMS (03-Z)	SCHOOL	$1,583,981.00
UNINCORPORATED	WATERS EDGE	SCHOOL	$7,759,096.00
UNINCORPORATED	WESTERN PINES	SCHOOL	$52,305.00
UNINCORPORATED	WHISPERING PINES	SCHOOL	$8,654,815.00
UNINCORPORATED	WOODLANDS	SCHOOL	$12,567,750.00
UNINCORPORATED	WYNNEBROOK	SCHOOL	$4,157,931.00
UNINCORPORATED	PARK VISTA COMMUNITY	SCHOOL/SHELTER	$43,566,148.00
UNINCORPORATED	SEMINOLE RIDGE	SCHOOL/SHELTER	$41,468,460.00
UNINCORPORATED	WEST BOCA RATON COMMUNITY	SCHOOL/SHELTER	$22,486,715.00
UNINCORPORATED	WEST GATE	SCHOOL/SHELTER	$14,774,822.00
UNINCORPORATED	PET FRIENDLY (WEST BOYNTON RECREATION CENTER)	SHELTER	$7,114,795.00
UNINCORPORATED	SPECIAL CARE UNIT (S. FL. EXPO BLDG)	SHELTER	$30,354,108.00
UNINCORPORATED	BOYNTON BEACH WEST WATER TREATMENT	UTILITY	$1,874,704.00
UNINCORPORATED	LAKE CLARKE SHORES	UTILITY	$102,299.00
UNINCORPORATED	N. COUNTY GENERAL AIRPORT	UTILITY	$30,548,545.00
UNINCORPORATED	PALM BEACH COUNTY REPUMP #5	UTILITY	$3,850,109.00
UNINCORPORATED	PALM BEACH COUNTY WASTE WATER TREATMENT 2	UTILITY	$1,838,263.00

UNINCORPORATED	PALM BEACH COUNTY WASTE WATER TREATMENT 7	UTILITY	$711,280.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #1	UTILITY	$259,457,962.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #2	UTILITY	$2,226,646.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #3	UTILITY	$8,597,069.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #7	UTILITY	$711,280.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #8	UTILITY	$4,086,857.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #9S	UTILITY	$5,833,406.00
UNINCORPORATED	PALM SPRINGS WATER TREATMENT	UTILITY	$1,325,323.00
UNINCORPORATED	PRATT & WHITNEY INDUSTRIAL WASTEWATER	UTILITY	$40,000,000.00
UNINCORPORATED	SEACOAST UTILITY RICHARD ROAD WATER TREATMENT	UTILITY	$2,022,660.00
TOTAL			$6,269,489,798.00

VALUE OF CRITICAL FACILITIES AT RISK FROM FLOOD HAZARDS

JURISDICTION	FACILITY	TYPE	ESTIMATED VALUE
ATLANTIS	PALM BEACH COUNTY FIRE RESCUE STATION #43	FIRE STATION	$766,399.00
ATLANTIS	JFK MEDICAL CENTER	HOSPITAL	$67,884,466.00
ATLANTIS	ATLANTIS POLICE DEPARTMENT	LAW ENFORCEMENT	$1,301,044.00
BOYNTON BEACH	A NEW BEGINING ASSISTED LIVING, LLC	ADULT LIVING	$231,432.00
BOYNTON BEACH	POINTE AT NEWPORT PLACE, THE	ADULT LIVING	$4,581,221.00
BOYNTON BEACH	SIMPSON ADULT CARE FACILITY	ADULT LIVING	$133,776.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$1,813,965.00
BOYNTON BEACH	BOYNTON BEACH FIRE DEPARTMENT STATION #5	FIRE STATION	$2,378,370.00
BOYNTON BEACH	HAMLIN PLACE	NURSING HOME	$3,627,559.00
BOYNTON BEACH	HEARTLAND HEALTH CARE CENTER - BOYNTON BEACH	NURSING HOME	$3,578,009.00
BOYNTON BEACH	CITRUS COVE	SCHOOL	$6,004,573.00
BOYNTON BEACH	CONGRESS	SCHOOL	$10,244,805.00
BOYNTON BEACH	FREEDOM SHORES	SCHOOL	$10,520,458.00
BOYNTON BEACH	GALAXY	SCHOOL	$6,087,229.00
BOYNTON BEACH	POINCIANA	SCHOOL	$412,131.00
BOYNTON BEACH	ROLLING GREEN	SCHOOL	$11,496,893.00
BOYNTON BEACH	BOYNTON BEACH	SCHOOL/SHELTER	$8,188,679.00
DELRAY BEACH	PINE GROVE	SCHOOL	$5,845,200.00
DELRAY BEACH	VILLAGE ACADEMY	SCHOOL	$9,624,453.00
DELRAY BEACH	DELRAY BEACH WATER TREATMENT	UTILITY	$6,982,374.00
GREENACRES	ARBOR OAKS AT GREENACRES	ADULT LIVING	$4,522,583.00
GREENACRES	COTTAGES OF GREENACRES	ADULT LIVING	$3,351,648.00
GREENACRES	GREENACRES FIRE DEPARTMENT STATION #94	FIRE STATION	$6,028,767.00
GREENACRES	GREENACRES FIRE DEPARTMENT STATION #95	FIRE STATION	$6,028,767.00

GREENACRES	GREENACRES POLICE DEPARTMENT	LAW ENFORCEMENT	$6,028,767.00
GREENACRES	WOOD LAKE NURSING AND REHABILITATION CENTER	NURSING HOME	$4,058,970.00
GREENACRES	CHOLEE LAKE	SCHOOL	$11,466,924.00
GREENACRES	DIAMOND VIEW	SCHOOL	$14,010,766.00
GREENACRES	GREENACRES	SCHOOL	$7,999,301.00
GREENACRES	HERITAGE	SCHOOL	$12,225,777.00
GREENACRES	LC SWAIN	SCHOOL	$23,382,501.00
GREENACRES	LIBERTY PARK	SCHOOL	$11,149,825.00
GREENACRES	OKEEHEELEE	SCHOOL	$12,629,810.00
GREENACRES	TRADEWINDS	SCHOOL	$31,545,717.00
GREENACRES	JOHN I. LEONARD	SCHOOL/SHELTER	$40,463,849.00
GULFSTREAM	GULFSTREAM POLICE DEPARTMENT	LAW ENFORCEMENT	$1,094,177.00
HAVERHILL	EL PINAR CARE CENTER, INC.	ADULT LIVING	$217,904.00
HAVERHILL	FAMILY RETIREMENT INN, INC.	ADULT LIVING	$0.00
JUNO BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #15	FIRE STATION	$792,490.00
JUPITER	COURTYARD GARDENS OF JUPITER	ADULT LIVING	$7,731,724.00
JUPITER	MORNING STAR OF JUPITER INC #2	ADULT LIVING	$325,781.00
JUPITER	MORNING STAR OF JUPITER, INC.	ADULT LIVING	$193,562.00
JUPITER	ST JOSEPH'S ASSISTED LIVING	ADULT LIVING	$5,000,000.00
JUPITER	PALM BEACH COUNTY FIRE RESCUE STATION #19	FIRE STATION	$291,905.00
JUPITER	JUPITER POLICE DEPARTMENT	LAW ENFORCEMENT	$20,070,469.00
JUPITER	JUPITER CARE CENTER	NURSING HOME	$3,432,364.00
JUPITER	JERRY THOMAS	SCHOOL	$10,585,387.00
JUPITER	JUPITER ELEMENTARY	SCHOOL	$11,364,324.00
JUPITER	LIGHTHOUSE	SCHOOL	$6,850,622.00
JUPITER	LIMESTONE CREEK	SCHOOL	$10,453,135.00
JUPITER	INDEPENDENCE	SCHOOL/SHELTER	$10,960,651.00

JUPITER	JUPITER WATER TREATMENT	UTILITY	$4,767,040.00
LAKE CLARKE SHORES	LAKE CLARKE SHORES POLICE DEPARTMENT	LAW ENFORCEMENT	$499,288.00
LAKE WORTH	CREST MANOR ASSISTED LIVING FACILITY	ADULT LIVING	$745,173.00
LAKE WORTH	NUESTRA CASA	ADULT LIVING	$237,292.00
LAKE WORTH	TROPICAL GARDEN VILLAS INC. (ANNEX)	ADULT LIVING	$210,438.00
LAKE WORTH	TROPICAL GARDEN VILLAS INC. (HOME)	ADULT LIVING	$210,438.00
LAKE WORTH	LAKE WORTH FIRE DEPARTMENT STATION #91	FIRE STATION	$6,471,068.00
LAKE WORTH	LAKE WORTH FIRE DEPARTMENT STATION #93	FIRE STATION	$421,386.00
LAKE WORTH	PALM BEACH COUNTY SHERIFF DISTRICT XIV	LAW ENFORCEMENT	$6,471,068.00
LAKE WORTH	AVANTE AT LAKE WORTH, INC.	NURSING HOME	$3,416,962.00
LAKE WORTH	LAKE WORTH MANOR	NURSING HOME	$4,048,109.00
LAKE WORTH	MEDICANA NURSING AND REHAB CENTER	NURSING HOME	$1,839,940.00
LAKE WORTH	TERRACES OF LAKE WORTH REHABILITATION AND HEALTH CENTER	NURSING HOME	$2,024,664.00
LAKE WORTH	BARTON	SCHOOL	$2,917,474.00
LAKE WORTH	HIGHLAND	SCHOOL	$11,820,781.00
LAKE WORTH	LAKE WORTH HIGH	SCHOOL	$25,315,485.00
LAKE WORTH	LAKE WORTH MIDDLE	SCHOOL	$10,597,470.00
LAKE WORTH	NORTH GRADE	SCHOOL	$277,200.00
LAKE WORTH	SOUTH GRADE	SCHOOL	$8,116,488.00
LAKE WORTH	LAKE WORTH MUNICIPAL WATER TREATMENT	UTILITY	$4,294,097.00
LANTANA	PALM BEACH CLUB, LLC	ADULT LIVING	$29,000,000.00
LANTANA	PALM BEACH COUNTY FIRE RESCUE STATION #37	FIRE STATION	$3,333,004.00
LANTANA	A G HOLLEY STATE	HOSPITAL	$39,127,458.00
LANTANA	FLORIDA HIGHWAY PATROL TROOP L	LAW ENFORCEMENT	$39,127,458.00
LANTANA	LANTANA POLICE DEPARTMENT	LAW ENFORCEMENT	$3,333,004.00
LANTANA	LANTANA ELEMENTARY	SCHOOL	$10,891,698.00

LANTANA	LANTANA MIDDLE	SCHOOL	$16,088,327.00
LANTANA	LANTANA WATER TREATMENT	UTILITY	$3,333,004.00
LOXAHATCHEE GROVES	PALM BEACH COUNTY FIRE RESCUE STATION #21	FIRE STATION	$841,883.00
LOXAHATCHEE GROVES	LOXAHATCHEE GROVES	SCHOOL	$5,926,736.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$5,275,979.00
PALM BEACH	PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$7,565,782.00
PALM BEACH	PALM BEACH PUBLIC	SCHOOL	$12,421,456.00
PALM BEACH GARDENS	CHATSWORTH AT PGA NATIONAL	ADULT LIVING	$6,856,348.00
PALM BEACH GARDENS	EMMANUEL CARE ALF, INC	ADULT LIVING	$276,353.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #61	FIRE STATION	$12,430,908.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #62	FIRE STATION	$872,691.00
PALM BEACH GARDENS	PALM BEACH GARDENS FIRE RESCUE STATION #64	FIRE STATION	$867,013.00
PALM BEACH GARDENS	PALM BEACH GARDENS MEDICAL CENTER	HOSPITAL	$20,000,000.00
PALM BEACH GARDENS	PALM BEACH GARDENS PD	LAW ENFORCEMENT	$12,430,908.00
PALM BEACH GARDENS	CHATSWORTH AT PGA NATIONAL	NURSING HOME	$6,856,348.00
PALM BEACH GARDENS	HOWELL L. WATKINS	SCHOOL	$8,924,221.00
PALM BEACH GARDENS	MARSH POINTE	SCHOOL	$6,540,000.00
PALM BEACH GARDENS	PALM BEACH GARDENS ELEMENTARY	SCHOOL	$3,581,566.00
PALM BEACH GARDENS	PALM BEACH GARDENS HIGH	SCHOOL	$19,376,514.00
PALM BEACH GARDENS	WATSON B. DUNCAN	SCHOOL	$21,676,687.00
PALM SPRINGS	PALM BEACH COUNTY FIRE RESCUE STATION #31	FIRE STATION	$144,492.00
PALM SPRINGS	PALM SPRINGS FIRE DEPARTMENT	FIRE STATION	$8,753,582.00
PALM SPRINGS	PALM SPRINGS PD	LAW ENFORCEMENT	$8,753,582.00
PALM SPRINGS	CLIFFORD O. TAYLOR / KIRKLANE	SCHOOL	$6,366,872.00
PALM SPRINGS	PALM SPRINGS ELEMENTARY	SCHOOL	$11,878,952.00
PALM SPRINGS	PALM SPRINGS MIDDLE	SCHOOL	$132,566.00
PALM SPRINGS	PALM SPRINGS WATER TREATMENT	UTILITY	$1,188,102.00

RIVIERA BEACH	HOWARD HOUSE	ADULT LIVING	$152,059.00
ROYAL PALM BEACH	CASSIE'S CASTLE	ADULT LIVING	$238,466.00
ROYAL PALM BEACH	MEADOWLARK INN	ADULT LIVING	$221,082.00
ROYAL PALM BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #28	FIRE STATION	$9,050,098.00
ROYAL PALM BEACH	ROYAL MANOR	NURSING HOME	$4,334,863.00
ROYAL PALM BEACH	CRESTWOOD	SCHOOL	$9,898,169.00
ROYAL PALM BEACH	CYPRESS TRAILS	SCHOOL	$6,024,553.00
ROYAL PALM BEACH	H.L. JOHNSON	SCHOOL	$6,446,044.00
ROYAL PALM BEACH	ROYAL PALM BEACH ELEMENTARY	SCHOOL	$10,875,172.00
ROYAL PALM BEACH	ROYAL PALM BEACH HIGH	SCHOOL	$39,304,062.00
ROYAL PALM BEACH	ROYAL PALM BEACH WASTE WATER TREATMENT	UTILITY	$12,371,800.00
ROYAL PALM BEACH	ROYAL PALM BEACH WATER TREATMENT	UTILITY	$1,349,946.00
WELLINGTON	GOLDENCARE OF WELLINGTON, INC.	ADULT LIVING	$350,107.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #25	FIRE STATION	$625,370.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #30	FIRE STATION	$882,142.00
WELLINGTON	PALM BEACH COUNTY SHERIFF DISTRICT VIII	LAW ENFORCEMENT	$6,000,000.00
WELLINGTON	EMERALD COVE	SCHOOL	$10,891,644.00
WELLINGTON	NEW HORIZONS	SCHOOL	$5,496,729.00
WELLINGTON	WELLINGTON HIGH	SCHOOL	$23,173,285.00
WELLINGTON	WELLINGTON ELEMENTARY	SCHOOL	$6,034,541.00
WELLINGTON	WELLINGTON LANDINGS	SCHOOL	$13,585,849.00
WELLINGTON	PALM BEACH CENTRAL	SCHOOL/SHELTER	$39,674,385.00
WELLINGTON	POTABLE WATER	UTILITY	$4,260,423.00
WELLINGTON	VILLAGE OF WELLINGTON WATER TREATMENT	UTILITY	$4,260,423.00
WEST PALM BEACH	MI CASA ES TU CASA #2	ADULT LIVING	$241,171.00
WEST PALM BEACH	TRADITION OF THE PALM BEACHES	ADULT LIVING	$25,301,615.00
WEST PALM BEACH	PALM BEACH COUNTY FIRE RESCUE STATION #17	FIRE STATION	$2,054,344.00

WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #4	FIRE STATION	$3,756,702.00
WEST PALM BEACH	OAKWOOD CENTER OF THOSPITALE PALM BEACHOSPITALES, INC.	HOSPITAL	$6,212,989.00
WEST PALM BEACH	PALM BEACH COUNTY SHERIFF DISTRICT III	LAW ENFORCEMENT	$2,054,344.00
WEST PALM BEACH	EDWARD J. HEALEY REHABILITATION AND NURSING CENTER	NURSING HOME	$7,281,254.00
WEST PALM BEACH	JOSEPH L MORSE GERIATRIC CENTER INC	NURSING HOME	$13,027,454.00
WEST PALM BEACH	EGRET LAKE	SCHOOL	$6,439,434.00
WEST PALM BEACH	WESTWARD	SCHOOL	$4,152,285.00
WEST PALM BEACH	FOREST HILL	SCHOOL/SHELTER	$35,130,044.00
WEST PALM BEACH	WPB WATER TREATMENT	UTILITY	$8,669,182.00
UNINCORPORATED	A COUNTRY RESIDENCE	ADULT LIVING	$373,747.00
UNINCORPORATED	AAVALON OF PALM BEACH	ADULT LIVING	$4,230,247.00
UNINCORPORATED	ASSISTED LIVING OF PALM BEACH GARDENS, INC	ADULT LIVING	$374,547.00
UNINCORPORATED	ATLANTIS ASSISTED LIVING	ADULT LIVING	$2,573,016.00
UNINCORPORATED	ATRIA MERIDIAN	ADULT LIVING	$9,451,409.00
UNINCORPORATED	AVERY COTTAGE, INC.	ADULT LIVING	$167,580.00
UNINCORPORATED	AVOCADO SHADES, INC	ADULT LIVING	$358,545.00
UNINCORPORATED	B P ASSISTED LIVING FACILITY II	ADULT LIVING	$199,700.00
UNINCORPORATED	CLASSIC RESIDENCE BY HYATT AT LAKESIDE VILLAGE	ADULT LIVING	$0.00
UNINCORPORATED	CRESTHAVEN EAST	ADULT LIVING	$6,201,107.00
UNINCORPORATED	FINNISH-AMERICAN REST HOME, INC.	ADULT LIVING	$6,072,674.00
UNINCORPORATED	HERON'S RUN	ADULT LIVING	$0.00
UNINCORPORATED	HIDDEN GARDEN	ADULT LIVING	$318,649.00
UNINCORPORATED	LEE RESIDENCE	ADULT LIVING	$540,572.00
UNINCORPORATED	LOVING WITH CARE INC	ADULT LIVING	$441,502.00
UNINCORPORATED	PERSONAL ELDER CARE II	ADULT LIVING	$188,786.00
UNINCORPORATED	PLEASANT RETIREMENT HOME INC.	ADULT LIVING	$201,664.00

UNINCORPORATED	PREFERRED LIFESTYLE	ADULT LIVING	$260,881.00
UNINCORPORATED	SUMMERVILLE AT BOYNTON BEACH	ADULT LIVING	$10,715,440.00
UNINCORPORATED	SUNRISE ADULT CARE	ADULT LIVING	$190,418.00
UNINCORPORATED	TRINITY CARE ASSISTED LIVING FACILITY	ADULT LIVING	$178,807.00
UNINCORPORATED	TYVAL ASSISTED LIVING FACILITY, LLC	ADULT LIVING	$189,306.00
UNINCORPORATED	YANIRI ASSISTED L IVING FACILITY	ADULT LIVING	$341,496.00
UNINCORPORATED	NORTH PALM BEACH COUNTY GENERAL AVIATION	AIRPORT	$30,548,545.00
UNINCORPORATED	PALM BEACH COUNTY PARK	AIRPORT	$54,375,512.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #24	FIRE STATION	$408,126.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #26	FIRE STATION	$507,516.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #32	FIRE STATION	$664,046.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #33	FIRE STATION	$9,060,602.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #35	FIRE STATION	$11,238,633.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #36	FIRE STATION	$668,086.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #46	FIRE STATION	$759,069.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #57	FIRE STATION	$1,510,609.00
UNINCORPORATED	GUN CLUB ROAD COURT LOCATION	GOVERNMENT	$137,358,713.00
UNINCORPORATED	PALM BEACH COUNTY EOC	GOVERNMENT	$12,554,898.00
UNINCORPORATED	PALMS WEST	HOSPITAL	$28,774,077.00
UNINCORPORATED	SELECT SPECIALTY HOSPITAL-PALM BEACH, INC	HOSPITAL	$9,483,195.00
UNINCORPORATED	FLORIDA HIGHWAY PATROL TROOP K	LAW ENFORCEMENT	$6,301,912.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT VI	LAW ENFORCEMENT	$543,555.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF HEADQUARTERS	LAW ENFORCEMENT	$137,358,713.00
UNINCORPORATED	AMERICAN-FINNISH NURSING HOME	NURSING HOME	$6,072,674.00
UNINCORPORATED	BOYNTON BEACH REHABILITATION CENTER	NURSING HOME	$6,526,815.00
UNINCORPORATED	CLASSIC RESIDENCE BY HYATT AT LAKESIDE VILLAGE	NURSING HOME	$0.00
UNINCORPORATED	CONSULATE HEALTH CARE OF WEST PALM BEACH	NURSING HOME	$3,572,157.00

UNINCORPORATED	CORAL BAY HEALTHCARE AND REHABILITATION	NURSING HOME	$0.00
UNINCORPORATED	CROSSINGS, THE	NURSING HOME	$4,236,012.00
UNINCORPORATED	LIBERTY INN, LLC	NURSING HOME	$11,532,913.00
UNINCORPORATED	SIGNATURE HEALTH CARE OF PALM BEACH	NURSING HOME	$3,709,017.00
UNINCORPORATED	BERKSHIRE	SCHOOL	$14,228,391.00
UNINCORPORATED	CORAL REEF	SCHOOL	$11,852,417.00
UNINCORPORATED	CRYSTAL LAKES	SCHOOL	$8,011,679.00
UNINCORPORATED	DWIGHT D. EISENHOWER	SCHOOL	$3,798,491.00
UNINCORPORATED	FOREST HILL	SCHOOL	$8,584,778.00
UNINCORPORATED	FRONTIER	SCHOOL	$9,656,300.00
UNINCORPORATED	HIDDEN OAKS	SCHOOL	$19,602,183.00
UNINCORPORATED	INDIAN PINES	SCHOOL	$9,282,958.00
UNINCORPORATED	MANATEE	SCHOOL	$8,474,829.00
UNINCORPORATED	MEADOW PARK	SCHOOL	$10,700,731.00
UNINCORPORATED	MELALEUCA	SCHOOL	$5,077,494.00
UNINCORPORATED	PINE JOG (03-Y)	SCHOOL	$661,521.00
UNINCORPORATED	ROYAL PALM SCHOOL	SCHOOL	$42,538,965.00
UNINCORPORATED	SANTALUCES	SCHOOL	$42,538,965.00
UNINCORPORATED	STARLIGHT COVE	SCHOOL	$12,035,111.00
UNINCORPORATED	WYNNEBROOK	SCHOOL	$4,157,931.00
UNINCORPORATED	PARK VISTA COMMUNITY	SCHOOL/SHELTER	$43,566,148.00
UNINCORPORATED	SEMINOLE RIDGE	SCHOOL/SHELTER	$41,468,460.00
UNINCORPORATED	PET FRIENDLY (WEST BOYNTON RECREATION CENTER)	SHELTER	$7,114,795.00
UNINCORPORATED	BOYNTON BEACH WEST WATER TREATMENT	UTILITY	$1,874,704.00
UNINCORPORATED	LAKE CLARKE SHORES	UTILITY	$102,299.00
UNINCORPORATED	N. COUNTY GENERAL AIRPORT	UTILITY	$30,548,545.00
UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #1	UTILITY	$259,457,962.00

UNINCORPORATED	PALM BEACH COUNTY WATER TREATMENT #2	UTILITY	$2,226,646.00
UNINCORPORATED	PALM SPRINGS WATER TREATMENT	UTILITY	$1,325,323.00
UNINCORPORATED	SEACOAST UTILITY RICHARD ROAD WATER TREATMENT	UTILITY	$2,022,660.00
TOTAL			$2,326,904,662.00

VALUE OF CRITICAL FACILITIES AT RISK FROM

WILDLAND URBAN INTERFACE FIRE HAZARD

JURISDICTION	FACILITY	TYPE	ESTIMATED VALUE
LOXAHATCHEE GROVES	PALM BEACH COUNTY FIRE RESCUE STATION #21	FIRE STATION	$841,883.00
LOXAHATCHEE GROVES	LOXAHATCHEE GROVES	SCHOOL	$5,926,736.00
WELLINGTON	A HOME FOR ME, INC	ADULT LIVING	$266,858.00
WELLINGTON	GOLDENCARE OF WELLINGTON, INC.	ADULT LIVING	$350,107.00
WELLINGTON	RESIDENCE AT PADDOCK PARK	ADULT LIVING	$247,554.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #20	FIRE STATION	$718,038.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #25	FIRE STATION	$625,370.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #27	FIRE STATION	$546,419.00
WELLINGTON	PALM BEACH COUNTY FIRE RESCUE STATION #30	FIRE STATION	$882,142.00
WELLINGTON	WELLINGTON REGIONAL MEDICAL CENTER	HOSPITAL	$29,049,326.00
WELLINGTON	PALM BEACH COUNTY SHERIFF DISTRICT VIII	LAW ENFORCEMENT	$6,000,000.00
WELLINGTON	BINKS FOREST	SCHOOL	$13,123,925.00
WELLINGTON	ELBRIDGE GALE	SCHOOL	$3,277,054.00
WELLINGTON	EMERALD COVE	SCHOOL	$10,891,644.00
WELLINGTON	EQUESTRIAN TRAILS	SCHOOL	$16,917,723.00
WELLINGTON	NEW HORIZONS	SCHOOL	$5,496,729.00
WELLINGTON	POLO PARK	SCHOOL	$19,643,835.00
WELLINGTON	WELLINGTON HIGH	SCHOOL	$23,173,285.00
WELLINGTON	WELLINGTON ELEMENTARY	SCHOOL	$6,034,541.00
WELLINGTON	WELLINGTON LANDINGS	SCHOOL	$13,585,849.00
WELLINGTON	PALM BEACH CENTRAL	SCHOOL/SHELTER	$39,674,385.00
WELLINGTON	POTABLE WATER	UTILITY	$4,260,423.00
WELLINGTON	VILLAGE OF WELLINGTON WASTE WATER TREATMENT	UTILITY	$9,259,508.00

WELLINGTON	VILLAGE OF WELLINGTON WATER TREATMENT	UTILITY	$4,260,423.00
UNINCORPORATED	A COUNTRY RESIDENCE	ADULT LIVING	$373,747.00
UNINCORPORATED	AVOCADO SHADES, INC	ADULT LIVING	$358,545.00
UNINCORPORATED	CARING HANDS AT ACREAGE, INC	ADULT LIVING	$453,612.00
UNINCORPORATED	HIDDEN PINES A.L.F., INC.	ADULT LIVING	$266,093.00
UNINCORPORATED	LOVING WITH CARE INC	ADULT LIVING	$441,502.00
UNINCORPORATED	YANIRI ASSISTED L IVING FACILITY	ADULT LIVING	$341,496.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #14	FIRE STATION	$398,703.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #22	FIRE STATION	$8,000,000.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #26	FIRE STATION	$507,516.00
UNINCORPORATED	PALMS WEST	HOSPITAL	$28,774,077.00
UNINCORPORATED	ACREAGE PINES	SCHOOL	$6,148,248.00
UNINCORPORATED	FRONTIER	SCHOOL	$9,656,300.00
UNINCORPORATED	GOLDEN GROVE	SCHOOL	$52,305.00
UNINCORPORATED	JUPITER FARMS	SCHOOL	$5,284,279.00
UNINCORPORATED	OSCEOLA CREEK	SCHOOL	$18,082,003.00
UNINCORPORATED	PIERCE HAMMOCK	SCHOOL	$11,700,205.00
UNINCORPORATED	WESTERN PINES	SCHOOL	$52,305.00
UNINCORPORATED	SEMINOLE RIDGE	SCHOOL/SHELTER	$41,468,460.00
TOTAL			$347,413,153.00

VALUE OF CRITICAL FACILITIES AT RISK

FROM COASTAL EROSION HAZARDS

JURISDICTION	FACILITY	TYPE	ESTIMATED VALUE
BOCA RATON	BOCA RATON FIRE DEPARTMENT STATION #3	FIRE STATION	$8,974,393.00
DELRAY BEACH	DELRAY BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$2,989,518.00
GULF STREAM	GULFSTREAM POLICE DEPARTMENT	LAW ENFORCEMENT	$1,094,177.00
JUNO BEACH	JUNO BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$2,104,882.00
JUPITER INLET COLONY	JUPITER INLET COLONY POLICE DEPARTMENT	LAW ENFORCEMENT	$58,452.00
LANTANA	PALM BEACH CLUB, LLC	ADULT LIVING	$29,000,000.00
OCEAN RIDGE	OCEAN RIDGE FIRE DEPARTMENT	FIRE STATION	$1,401,240.00
OCEAN RIDGE	OCEAN RIDGE POLICE DEPARTMENT	LAW ENFORCEMENT	$1,401,240.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #1	FIRE STATION	$5,275,979.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #2	FIRE STATION	$2,368,745.00
PALM BEACH	PALM BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$23,230,865.00
PALM BEACH	PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$7,565,782.00
RIVIERA BEACH	RIVIERA BEACH FIRE DEPARTMENT STATION #3	FIRE STATION	$3,027,557.00
SOUTH PALM BEACH	SOUTH PALM BEACH POLICE DEPARTMENT	LAW ENFORCEMENT	$1,947,102.00
TOTAL			$90,439,932.00

VALUE OF CRITICAL FACILITIES AT RISK FROM

HERBERT HOOVER DIKE FAILURE

JURISDICTION	FACILITY	TYPE	ESTIMATED VALUE
BELLE GLADE	BELLE GLADE STATE AIRPORT	AIRPORT	$355,511.00
BELLE GLADE	PALM BEACH COUNTY FIRE RESCUE STATION #73	FIRE STATION	$2,706,958.00
BELLE GLADE	GLADES GENERAL	HOSPITAL	$6,786,526.00
BELLE GLADE	BELLE GLADE	SCHOOL	$8,786,840.00
BELLE GLADE	GLADE VIEW	SCHOOL	$3,711,299.00
BELLE GLADE	GOVE	SCHOOL	$4,321,950.00
BELLE GLADE	PIONEER PARK	SCHOOL	$25,505,038.00
BELLE GLADE	GLADES CENTRAL	SCHOOL/SHELTER	$25,505,038.00
BELLE GLADE	LAKE SHORE MIDDLE	SCHOOL/SHELTER	$16,529,863.00
BELLE GLADE	BELLE GLADE WATER TREATMENT	UTILITY	$574,741.00
PAHOKEE	PALM BEACH COUNTY FIRE RESCUE STATION #72	FIRE STATION	$784,921.00
PAHOKEE	PALM BEACH COUNTY SHERIFF DISTRICT XII	LAW ENFORCEMENT	$410,952.00
PAHOKEE	GLADES HEALTH CARE CENTER	NURSING HOME	$1,734,078.00
PAHOKEE	PAHOKEE	SCHOOL	$2,438,757.00
PAHOKEE	PAHOKEE MIDDLE / HIGH	SCHOOL	$11,566,413.00
PAHOKEE	PAHOKEE	UTILITY	$410,952.00
SOUTH BAY	PALM BEACH COUNTY FIRE RESCUE STATION #74	FIRE STATION	$898,711.00
SOUTH BAY	ROSENWALD	SCHOOL	$4,029,995.00
SOUTH BAY	SOUTH BAY WASTE WATER TREATMENT	UTILITY	$63,859.00
SOUTH BAY	SOUTH BAY WATER TREATMENT	UTILITY	$398,048.00
WEST PALM BEACH	WEST PALM BEACH FIRE DEPARTMENT STATION #8	FIRE STATION	$1,172,982.00
WEST PALM BEACH	PALM BEACH COUNTY SHERIFF DISTRICT III	LAW ENFORCEMENT	$2,054,344.00
UNINCORPORATED	CARING HANDS AT ACREAGE, INC	ADULT LIVING	$453,612.00

UNINCORPORATED	YANIRI ASSISTED L IVING FACILITY	ADULT LIVING	$341,496.00
UNINCORPORATED	PALM BEACH COUNTY GLADES AIRPORT	AIRPORT	$0.00
UNINCORPORATED	PALM BEACH COUNTY FIRE RESCUE STATION #26	FIRE STATION	$507,516.00
UNINCORPORATED	WEST COUNTY COURTHOUSE	GOVERNMENT	$14,888,853.00
UNINCORPORATED	WEST COUNTY ADMINISTRATION BLDG	GOVERNMENT	$1,913,673.00
UNINCORPORATED	PALM BEACH COUNTY SHERIFF DISTRICT V	LAW ENFORCEMENT	$14,888,853.00
UNINCORPORATED	ACREAGE PINES	SCHOOL	$6,148,248.00
UNINCORPORATED	FRONTIER	SCHOOL	$9,656,300.00
UNINCORPORATED	K.E. CUNNINGHAM / CANAL POINT	SCHOOL	$5,575,764.00
UNINCORPORATED	OSCEOLA CREEK	SCHOOL	$18,082,003.00
UNINCORPORATED	PIERCE HAMMOCK	SCHOOL	$11,700,205.00
UNINCORPORATED	N. COUNTY GENERAL AIRPORT	UTILITY	$30,548,545.00
TOTAL			$235,452,844.00

VALUE OF CRITCAL FACILITIES AT RISK FROM

AGRICULTURAL HAZARDS

FACILITY	TYPE	ESTIMATED VALUE
BELLE GLADE STATE AIRPORT	AIRPORT	$355,511.00
PALM BEACH COUNTY FIRE RESCUE STATION #73	FIRE STATION	$2,706,958.00
GLADES GENERAL	HOSPITAL	$6,786,526.00
BELLE GLADE	SCHOOL	$8,786,840.00
GLADE VIEW	SCHOOL	$3,711,299.00
GOVE	SCHOOL	$4,321,950.00
PIONEER PARK	SCHOOL	$25,505,038.00
GLADES CENTRAL	SCHOOL/SHELTER	$25,505,038.00
LAKE SHORE MIDDLE	SCHOOL/SHELTER	$16,529,863.00
BELLE GLADE WATER TREATMENT	UTILITY	$574,741.00
PALM BEACH COUNTY FIRE RESCUE STATION #72	FIRE STATION	$784,921.00
PALM BEACH COUNTY SHERIFF DISTRICT XII	LAW ENFORCEMENT	$410,952.00
GLADES HEALTH CARE CENTER	NURSING HOME	$1,734,078.00
PAHOKEE	SCHOOL	$2,438,757.00
PAHOKEE MIDDLE / HIGH	SCHOOL	$11,566,413.00
PAHOKEE	UTILITY	$410,952.00
PALM BEACH COUNTY FIRE RESCUE STATION #74	FIRE STATION	$898,711.00
ROSENWALD	SCHOOL	$4,029,995.00
SOUTH BAY WASTE WATER TREATMENT	UTILITY	$63,859.00
SOUTH BAY WATER TREATMENT	UTILITY	$398,048.00
PALM BEACH COUNTY GLADES AIRPORT	AIRPORT	$0.00
PALM BEACH COUNTY SHERIFF DISTRICT V	LAW ENFORCEMENT	$14,888,853.00
K.E. CUNNINGHAM / CANAL POINT	SCHOOL	$5,575,764.00
WEST COUNTY COURTHOUSE	GOVERNMENT	$14,888,853.00

WEST COUNTY ADMINISTRATION BLDG	GOVERNMENT	$1,913,673.00
TOTAL		$154,787,593.00

SECTION 3B: VULNERABILITY OF RESIDENTIAL & COMMERCIAL PROPERTIES

This subsection assesses the structural vulnerability of residential and commercial properties by jurisdiction in terms of the dollar values of property at risk from key hazards, in partial fulfillment of the following FEMA requirement:

Requirement §201.6(c)(2)(ii)(A): *The plan* ***should*** *describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area ….*

Numbers, types and characteristics of existing residential, commercial and critical service facilities and infrastructure are described in detail in **Special Appendix II**: **The Palm Beach County Hazard Environment**. Analyses of future facilities have been tabled in light of recent downturns in economic and real estate trends, the slowdown in relocations into the County, build-out in the eastern communities, slowdown in construction because of skyrocketing construction costs, and other factors which have rendered growth projections essentially meaningless. For purposes of this plan, growth in number of structures is assumed to be essentially flat for the 4 year planning period. Quantitative and evaluative analyses of the vulnerability of future residential, commercial and critical services structures is considered to best be tabled until these factors stabilize or are reversed

The following observations are offered with regard to future facilities:

- Developable coastal areas of the County are substantially built out. Future development in these areas will likely be replacement and upgrading of existing facilities.
- Development in the Coastal High Area is strictly limited by local ordinances and codes which tend to meet or exceed those recommended by the State of Florida.
- Future growth throughout the County is guided by the managed growth tiers described in Land Use section of Special Appendix II which considers hazard vulnerability.
- Virtually the whole County is potentially vulnerable to isolated flooding during excessive rain events, even areas lying outside Special Flood Hazard Areas. Repetitive flood loss properties are widely scattered, not clustered, as the County has only one river and no significant elevation variations to speak of.
- All new residential, commercial and critical service facilities will be built to meet or exceed South Florida Building hurricane standards. Several local developers are now building Category 5 type structures.
- Wildfire mitigation practices are being promoted for development in the wildland-urban interface areas.

The following pages provide assessments of the dollar values of existing properties at risk at this writing, by hazard, by jurisdiction.

Methodology for Assessing Vulnerability of Existing Structures

After considering the advantages and limitations of the Hazards U.S. Multi-Hazard (HAZUS-MH) modeling software, it was decided instead to use local property appraisal databases, GIS

mapping capabilities and hazard environment profiles as the basis for identifying and quantifying property and dollars at risk from key hazards.
Analyses of the types and numbers of existing buildings in Palm Beach County are complicated by the County's size and diversity, and by highly variable and incompatible databases and record keeping practices. The primary data source is the Property Appraiser Database (PAPA). The PAPA database is not well suited for purposes of vulnerability assessments but it is the best data available.

A comprehensive profile of Palm Beach County's built environment is contained in the Special Appendix. It describes the residential, commercial, industrial, government, education, healthcare, religious and other building stocks.

The paragraphs below provide a brief summary of existing residential and commercial properties.

Residential Units

According to Property Appraiser data, there are an estimated 310,600 residential structures in Palm Beach County. Nearly 77 percent of the county's single family residential units are single story structures, 17 percent are multi-story, and 6.2 percent are manufactured homes. The residential housing stock is well distributed throughout the eastern portion of the County. Forty seven (47) percent of residential units reside in the unincorporated areas of the county. The seven municipalities of West Palm Beach, Boca Raton, Boynton Beach, Palm Beach Gardens, Jupiter, Wellington and Delray Beach collectively have about 35% of the county's residential units. The southern municipalities of Boca Raton, Delray Beach and Boynton Beach collectively have an estimated 46,348 residential units; the northern municipalities of Palm Beach Gardens and Jupiter have 25,622 units; West Palm Beach in central county has 20,377 units; and the communities of Wellington and Royal Palm Beach have 24,696 units. The western communities of Belle Glade, Pahokee and South Bay have approximately 4,850 total residential units. A breakdown of residential units by type by jurisdiction follows on the next page.

The overwhelming majority of residential structures (79%) are of CB Stucco construction. Thirteen and a half percent have exterior wall of wood in the form of wood siding, wood frame stucco or board batten. The balance are constructed of a variety of other materials. The County's database consists of approximately 25 categories, many of which have a multiplicity of variations.

Commercial Properties

Commercial properties were even more challenging to estimate. Property Appraiser data indicates that there are approximately 12,500 commercial and 6,750 industrial structures countywide. In addition other non-residential structures include 1,600 government structures, 64 healthcare facilities, and another 2,150 registered facilities of other types. A Property Appraiser analysis estimated the average age of structures countywide at 26 years and the average value at $218,355.

Number & Assessed Values of Residential & Commercial Property at Risk

Deriving an accurate estimate of residential property values at risk from hazards is complicated by a number of factors. Property Appraiser data is maintained on a parcel by parcel basis, not by structures. Certain gaps in values occur because of the diversity of property types. Land

values had to be backed out of assessed property values. Assessments represent market values, not replacement costs. Homestead exemptions were also backed out of analyses. Multi-family residential structures (like high rise condominiums, co-ops, townhouses, zero lot line units) are considered to be understated in the results.

The methodology used to estimate the value of residential property at risk involved a number of compromises using best available data. Parcel data was extracted from the Property Appraiser database. It was sorted by jurisdiction and hazard boundaries. A derived factor for land values was backed out of loss estimates to concentrate only on improved parcels.

Estimating the Value of Property Contents

Based in analyses of property records, values for residential contents at risk is assumed to be approximately 80% of the appraised value of the structure. Values for commercial contents and inventory at risk is assumed to be 175% of the appraised value of the structure. A countywide summary of property values at risk, including contents, is presented at the end of this Section.

Critical Facilities

This section contains a list of critical facilities and their assessed values derived from the Property Appraiser Database (PAPA). Critical facilities include but are not limited to law enforcement and fire rescue facilities, schools, government facilities, utility facilities, sea ports and airports, hospitals and other critical medical facilities, shelters, adult living facilities, etc.

About the Following Tables

Tables in this section include:

- Number and assessed values of residential and commercial properties by hazard by jurisdiction
- A summary of “improved” residential and commercial property values by jurisdiction
- Estimated total residential and commercial dollar losses under various loss scenarios
- Values of critical facilities at risk by hazard, by jurisdiction

Value of Parcels at Risk from Countywide Hazards

Jurisdiction	Commercial Property	Assessed Value	Residential Property	Assessed Value	Vacant Property	Assessed Value	Ag/Open Space Property	Assessed Value
Atlantis	34	$150,943,621.00	979	$275,444,538.00	19	$4,538,784.00	18	$175,736.00
Belle Glade	616	$103,977,172.00	2,705	$203,447,474.00	565	$10,389,340.00	55	$2,805,316.00
Boca Raton	1,393	$5,671,436,173.00	22,863	$9,516,856,766.00	924	$390,246,586.00	943	$17,081.00
Boynton Beach	1208	$1,423,276,457.00	18,193	$2,767,069,123.00	1,446	$241,414,273.00	832	$815,266.00
Briny Breezes	0	$0.00	0	$0.00	2	$297,910.00	0	$0.00
Cloud Lake	6	$0.00	48	$6,456,750.00	8	$948,879.00	0	$0.00
Delray Beach	1,500	$1,874,938,546.00	15,342	$4,444,042,833.00	1,209	$305,153,950.00	643	$2,993,398.00
Glen Ridge	9	$2,795,600.00	80	$14,647,276.00	9	$1,935,580.00	1	$1,650.00
Golf	51	$33,473,729.00	151	$105,577,856.00	14	$3,784,979.00	6	$0.00
Greenacres	226	$344,218,761.00	8,811	$1,160,134,817.00	206	$24,331,362.00	286	$7,428.00
Gulf Stream	21	$15,387,576.00	309	$594,599,350.00	19	$26,013,251.00	1	$0.00
Haverhill	24	$15,950,001.00	559	$73,573,964.00	36	$2,624,927.00	10	$780.00
Highland Beach	11	$16,600,000.00	380	$594,436,112.00	49	$41,834,076.00	32	$321,759.00
Hypoluxo	27	$16,353,234.00	630	$149,967,628.00	51	$4,166,978.00	30	$0.00
Juno Beach	66	$183,873,234.00	704	$274,128,356.00	102	$28,259,389.00	60	$0.00
Jupiter	823	$1,165,784,244.00	17,663	$5,196,069,630.00	1,624	$360,298,991.00	1,433	$4,457,607.00
Jupiter Inlet Colony	5	$1,600,000.00	234	$244,197,187.00	4	$4,399,471.00	2	$0.00
Lake Clarke Shores	29	$20,251,504.00	1,396	$226,804,915.00	31	$2,632,326.00	9	$0.00
Lake Park	364	$274,704,120.00	1,571	$238,020,003.00	68	$23,529,508.00	21	$7,117.00
Lake Worth	1,082	$463,266,658.00	8,825	$1,324,215,139.00	559	$64,887,817.00	44	$91,128.00
Lantana	209	$194,435,170.00	2,712	$563,200,523.00	73	$37,060,665.00	21	$3,573.00
Loxahatchee Groves	190	$46,012,823.00	788	$165,343,217.00	184	$52,553,707.00	396	$55,700,924.00
Manalapan	9	$128,166,296.00	190	$743,570,994.00	31	$117,704,906.00	3	$300.00
Mangonia Park	166	$141,398,452.00	207	$26,298,618.00	88	$13,273,225.00	5	$0.00
North Palm Beach	171	$188,831,863.00	2,770	$965,323,627.00	54	$38,211,861.00	101	$122,170.00
Ocean Ridge	34	$6,281,532.00	640	$551,078,161.00	82	$25,035,346.00	28	$55.00
Pahokee	232	$17,212,750.00	1,135	$66,458,464.00	298	$3,851,277.00	124	$6,924,778.00
Palm Beach	292	$1,319,404,452.00	2,411	$8,560,048,471.00	195	$618,834,978.00	50	$61,879.00

Value of Parcels at Risk from Countywide Hazards

Palm Beach Gardens	718	$2,236,515,617.00	19,287	$6,761,065,630.00	1,050	$257,609,689.00	1,894	$5,566,577.00
Palm Beach Shores	64	$56,171,853.00	372	$144,646,972.00	25	$17,604,731.00	8	$0.00
Palm Springs	279	$215,581,145.00	4,154	$511,098,918.00	190	$31,029,184.00	106	$50,244.00
Riviera Beach	1,172	$927,701,537.00	9,792	$1,646,970,987.00	839	$112,026,122.00	152	$1,625,074.00
Royal Palm Beach	404	$640,945,158.00	10,597	$1,750,980,808.00	451	$91,430,707.00	415	$1,524,986.00
South Bay	131	$17,639,627.00	690	$36,530,949.00	154	$3,521,283.00	21	$428,981.00
South Palm Beach	3	$5,221,940.00	19	$9,871,949.00	0	$0.00	5	$15,003.00
Tequesta	129	$195,417,461.00	1,865	$512,429,808.00	47	$41,336,721.00	58	$0.00
Wellington	935	$1,189,231,949.00	18,439	$5,503,587,408.00	1,233	$408,454,209.00	1,168	$21,279,999.00
West Palm Beach	3,143	$3,820,247,143.00	25,104	$5,158,812,624.00	1,310	$389,310,938.00	903	$1,116,934.00
Unincorporated	8,460	$6,482,508,406.00	163,227	$37,920,729,474.00	10,056	$1,705,960,062.00	14,551	$1,036,781,630.00

Value of Parcels at Risk from Agricultural Hazards

Jurisdiction	Commercial Property	Assessed Value	Residential Property	Assessed Value	Vacant Property	Assessed Value	Ag/Open Space Property	Assessed Value
Belle Glade	616	$103,977,172.00	2,705	$203,447,474.00	565	$10,389,340.00	55	$2,805,316.00
Pahokee	214	$79,432,066.00	1,135	$112,567,768.00	313	$6,710,724.00	128	$30,488,099.00
South Bay	123	$88,647,360.00	690	$67,299,592.00	162	$4,703,577.00	21	$3,177,032.00
Unincorporated	1,808	$26,438,961.00	456	$33,661,379.00	345	$10,015,260.00	2,915	$731,614,738.00

Value of Parcels at Risk from Coastal Erosion

Jurisdiction	Commercial Property	Assessed Value	Residential Property	Assessed Value	Vacant Property	Assessed Value	Ag/Open Space Property	Assessed Value
Boca Raton	35	$105,078,940.00	420	$340,907,113.00	35	$33,303,104.00	58	$743.00
Boynton Beach	3	$1,819,191.00	0	$0.00	0	$0.00	0	$0.00
Briny Breezes	15	$72,348.00	0	$0.00	0	$0.00	0	$0.00
Delray Beach	52	$90,231,128.00	651	$773,188,262.00	46	$76,910,307.00	24	$126,294.00
Gulf Stream	9	$4,281,011.00	78	$127,208,459.00	2	$609,607.00	0	$0.00
Highland Beach	2	$0.00	51	$148,834,355.00	21	$9,172,375.00	7	$919.00
Juno Beach	31	$26,711,715.00	327	$157,944,808.00	46	$16,487,761.00	27	$0.00
Jupiter	36	$1,775,209.00	344	$161,558,919.00	16	$6,269,089.00	50	$54,618.00
Jupiter Inlet Colony	5	$1,600,000.00	217	$211,607,310.00	4	$4,399,471.00	2	$0.00
Lake Worth	4	$77,001.00	0	$0.00	0	$0.00	0	$0.00
Lantana	4	$29,520,460.00	1	$1,643,040.00	0	$0.00	0	$0.00
Manalapan	3	$98,798,854.00	7	$20,325,773.00	1	$1,420.00	0	$0.00
North Palm Beach	0	$0.00	0	$0.00	0	$0.00	2	$0.00
Ocean Ridge	15	$6,281,532.00	458	$389,081,375.00	59	$20,117,920.00	19	$0.00
Palm Beach	109	$665,299,310.00	1,447	$5,482,404,921.00	116	$468,188,081.00	29	$16,802.00
Palm Beach Shores	6	$3,591,070.00	2	$5,409,030.00	2	$5,400,000.00	0	$0.00
Riviera Beach	5	$23,660,427.00	53	$22,557,267.00	5	$22,000,419.00	21	$221,236.00
South Palm Beach	3	$5,221,940.00	19	$9,871,949.00	0	$0.00	5	$15,003.00
Tequesta	1	$0.00	0	$0.00	0	$0.00	3	$0.00
Unincorporated	12	$5,383,375.00	82	$43,278,084.00	7	$15,419,370.00	15	$0.00

Value of Parcels at Risk in Evacuation Areas

Jurisdiction	Commercial Property	Assessed Value	Residential Property	Assessed Value	Vacant Property	Assessed Value	Ag/Open Space Property	Assessed Value
Boca Raton	245	$746,874,243.00	5,728	$4,030,845,525.00	280	$200,076,321.00	143	$898.00
Boynton Beach	189	$119,227,543.00	1,141	$279,844,839.00	183	$108,018,589.00	61	$209,411.00
Briny Breezes	0	$0.00	0	$0.00	2	$297,910.00	0	$0.00
Delray Beach	284	$316,834,463.00	2,409	$1,787,737,349.00	147	$142,281,169.00	110	$130,804.00
Gulf Stream	20	$15,387,576.00	292	$587,435,500.00	18	$25,772,923.00	0	$0.00
Highland Beach	11	$16,600,000.00	380	$594,436,112.00	49	$41,834,076.00	32	$321,759.00
Hypoluxo	11	$2,505,653.00	465	$133,094,010.00	6	$1,221,198.00	14	$0.00
Juno Beach	66	$183,873,234.00	704	$274,128,356.00	102	$28,259,389.00	60	$0.00
Jupiter	637	$824,021,587.00	10,740	$3,724,973,609.00	428	$175,826,264.00	511	$12,867.00
Jupiter Inlet Colony	5	$1,600,000.00	234	$244,197,187.00	4	$4,399,471.00	2	$0.00
Lake Park	30	$18,563,491.00	28	$5,688,154.00	0	$0.00	2	$0.00
Lake Worth	57	$23,274,645.00	1,662	$366,336,955.00	75	$16,109,339.00	12	$619.00
Lantana	45	$50,232,144.00	506	$308,239,639.00	38	$25,928,993.00	7	$13.00
Manalapan	9	$128,166,296.00	190	$743,570,994.00	31	$117,704,906.00	3	$300.00
North Palm Beach	145	$161,555,368.00	2,648	$897,553,259.00	46	$30,702,246.00	83	$90,886.00
Ocean Ridge	34	$6,281,532.00	640	$551,078,161.00	82	$25,035,346.00	28	$55.00
Palm Beach	292	$1,319,404,452.00	2,411	$8,560,048,471.00	195	$618,834,978.00	50	$61,879.00
Palm Beach Gardens	311	$1,142,043,119.00	3863	$1,798,402,857.00	92	$36,139,248.00	415	$2,626.00
Palm Beach Shores	64	$56,171,853.00	372	$144,646,972.00	25	$17,604,731.00	8	$0.00
Riviera Beach	130	$82,554,162.00	984	$331,198,706.00	99	$41,244,123.00	44	$320,650.00
South Palm Beach	3	$5,221,940.00	19	$9,871,949.00	0	$0.00	5	$15,003.00
Tequesta	123	$186,417,461.00	1,732	$479,620,309.00	43	$35,649,933.00	52	$0.00
West Palm Beach	349	$651,583,057.00	2,453	$811,583,588.00	198	$91,681,335.00	17	$1,218.00
Unincorporated	214	$146,736,919.00	7,188	$3,476,824,460.00	459	$199,483,892.00	431	$3,937,851.00

Value of Property at Risk from Historical Flooding

Jurisdiction	Commercial	Assessed Value	Residential	Assessed Value	Vacant	Assessed Value	Ag/Open Space	Assessed Value
Atlantis	34	$150,943,621.00	979	$275,444,538.00	19	$4,538,784.00	18	$175,736.00
Boca Raton	31	$43,055,384.00	290	$79,972,797.00	10	$2,787,912.00	9	$5.00
Boynton Beach	511	$880,809,934.00	10,324	$1,441,290,709.00	921	$70,301,606.00	587	$15,270.00
Cloud Lake	6	$0.00	48	$6,456,750.00	8	$948,879.00	0	$0.00
Delray Beach	160	$60,688,682.00	2,602	$1,113,988,955.00	156	$65,610,586.00	37	$4,498.00
Glen Ridge	9	$2,795,600.00	80	$14,647,276.00	9	$1,935,580.00	1	$1,650.00
Golf	2	$0.00	0	$0.00	0	$0.00	0	$0.00
Greenacres	226	$344,218,761.00	8,811	$1,160,134,817.00	206	$24,331,362.00	286	$7,428.00
Gulf Stream	7	$281,011.00	58	$86,464,856.00	3	$2,396,360.00	0	$0.00
Haverhill	21	$15,051,405.00	251	$35,741,364.00	27	$1,899,735.00	4	$780.00
Hypoluxo	5	$6,361,854.00	137	$10,448,050.00	43	$2,749,014.00	3	$0.00
Juno Beach	17	$8,796,261.00	284	$118,107,203.00	38	$9,534,588.00	21	$0.00
Jupiter	467	$517,656,660.00	10,501	$2,177,852,344.00	760	$123,726,741.00	585	$82,292.00
Lake Clarke Shores	29	$20,251,504.00	1,396	$226,804,915.00	31	$2,632,326.00	9	$0.00
Lake Worth	1066	$447,315,234.00	8,446	$1,210,669,266.00	549	$60,482,651.00	37	$98,407.00
Lantana	194	$159,110,950.00	2,271	$276,290,467.00	44	$15,814,968.00	17	$3,559.00
Loxahatchee Groves	181	$44,553,258.00	726	$149,870,769.00	166	$45,490,292.00	361	$49,172,202.00
Mangonia Park	55	$33,400,458.00	33	$2,332,829.00	37	$6,058,011.00	1	$0.00
North Palm Beach	18	$21,376,771.00	446	$57,840,730.00	3	$14,394,032.00	8	$0.00
Palm Beach	172	$722,353,332.00	1,051	$3,033,744,081.00	74	$206,749,072.00	21	$39,599.00
Palm Beach Gardens	299	$762,688,033.00	12,789	$3,819,293,217.00	177	$68,032,614.00	868	$257,486.00
Palm Springs	279	$215,581,145.00	4,154	$511,098,918.00	190	$31,029,184.00	106	$50,244.00
Riviera Beach	70	$32,982,155.00	301	$29,534,005.00	32	$2,261,887.00	0	$0.00
Royal Palm Beach	213	$332,996,360.00	7,702	$1,131,275,514.00	321	$53,238,353.00	356	$1,518,468.00
Tequesta	7	$2,567,995.00	199	$40,180,650.00	3	$445,772.00	0	$0.00
Wellington	242	$232,611,277.00	8,664	$1,751,529,424.00	175	$26,465,005.00	401	$7,755,935.00
West Palm Beach	434	$737,103,622.00	2,756	$530,284,273.00	83	$28,701,776.00	38	$1,993.00
Unincorporated	2,926	$1,926,807,694.00	62,525	$10,931,384,381.00	3,694	$539,299,295.00	2,593	$50,772,470.00

Value of Parcels at Risk from Herbert Hoover Dike Breach

Jurisdiction	Commercial Property	Assessed Value	Residential Property	Assessed Value	Vacant Property	Assessed Value	Ag/Open Space Property	Assessed Value
Belle Glade	616	$103,977,172.00	2,705	$203,447,474.00	565	$10,389,340.00	55	$2,805,316.00
Pahokee	214	$79,432,066.00	1,135	$112,567,768.00	313	$6,710,724.00	128	$30,488,099.00
South Bay	123	$88,647,360.00	690	$67,299,592.00	162	$4,703,577.00	21	$3,177,032.00
Unincorporated	2,273	$135,255,594.00	9,294	$1,912,738,901.00	2,545	$276,940,736.00	3,139	$755,849,332.00

Value of Parcels at Risk from Muck Fires

Jurisdiction	Commercial	Assessed Value	Residential	Assessed Value	Vacant	Assessed Value	Ag/Open Space	Assessed Value
Belle Glade	616	$103,977,172.00	2,705	$203,447,474.00	565	$10,389,340.00	55	$2,805,316.00
Boca Raton	21	$71,435,882.00	323	$166,583,379.00	26	$2,151,783.00	41	$1.00
Boynton Beach	49	$163,916,757.00	1,099	$295,359,511.00	63	$4,662,262.00	96	$580.00
Delray Beach	16	$72,469,447.00	140	$32,252,508.00	3	$1,801,832.00	7	$270,299.00
Golf	0	$0.00	2	$2,542,362.00	0	$0.00	1	$0.00
Greenacres	0	$0.00	30	$2,801,791.00	8	$387,000.00	0	$0.00
Haverhill	0	$0.00	5	$901,758.00	0	$0.00	1	$0.00
Highland Beach	2	$0.00	3	$5,065,851.00	3	$797,740.00	3	$302,499.00
Hypoluxo	0	$0.00	53	$17,045,173.00	0	$0.00	2	$0.00
Juno Beach	3	$0.00	4	$915,782.00	15	$480,586.00	1	$0.00
Jupiter	17	$11,926,891.00	124	$137,545,390.00	1	$0.00	29	$171.00
Lake Park	4	$13,875,759.00	1	$4,160,000.00	1	$0.00	9	$1,440.00
Lake Worth	5	$2,819,224.00	0	$0.00	12	$1,895,096.00	2	$519.00
Loxahatchee Groves	4	$214,584.00	12	$2,899,634.00	0	$0.00	2	$417,116.00
Mangonia Park	14	$9,463,976.00	36	$2,971,669.00	33	$622,862.00	0	$0.00
North Palm Beach	0	$0.00	13	$13,058,474.00	1	$300.00	3	$0.00
Ocean Ridge	2	$0.00	0	$0.00	11	$1,210,111.00	1	$0.00
Pahokee	214	$79,432,066.00	1,135	$112,567,768.00	313	$6,710,724.00	128	$30,488,099.00
Palm Beach	3	$0.00	0	$0.00	0	$0.00	0	$0.00
Palm Beach Gardens	11	$529,452.00	226	$65,132,114.00	2	$526,419.00	15	$0.00
Palm Springs	10	$8,863,600.00	299	$30,501,600.00	41	$5,966,989.00	11	$300.00
Riviera Beach	13	$20,768,995.00	358	$64,786,695.00	2	$1,324,080.00	23	$1,014,900.00
Royal Palm Beach	1	$451,868.00	128	$21,216,975.00	6	$646,447.00	11	$2,964.00
South Bay	123	$88,647,360.00	690	$67,299,592.00	162	$4,703,577.00	21	$3,177,032.00
Tequesta	0	$0.00	1	$31,162,765.00	0	$0.00	1	$0.00
Wellington	176	$112,242,557.00	481	$261,145,251.00	119	$83,409,530.00	132	$6,487,111.00
West Palm Beach	28	$88,278,037.00	123	$33,882,258.00	3	$7,598,656.00	15	$0.00
Unincorporated	1,789	$157,021,857.00	2,283	$510,180,842.00	457	$57,091,931.00	28,290	$722,805,114.00

Value of Parcels at Risk from Radiological Hazards

Jurisdiction	Commercial Property	Assessed Value	Residential Property	Assessed Value	Vacant Property	Assessed Value	Ag/Open Space Property	Assessed Value
Belle Glade	0	$0.00	2	$2,186,201.00	0	$0.00	0	$0.00
Cloud Lake	6	$0.00	48	$6,456,750.00	8	$948,879.00	0	$0.00
Glen Ridge	9	$2,795,600.00	80	$14,647,276.00	9	$1,935,580.00	1	$1,650.00
Greenacres	77	$136,736,756.00	4,274	$679,362,039.00	137	$14,089,305.00	239	$14.00
Haverhill	24	$15,950,001.00	561	$74,759,784.00	36	$2,624,927.00	13	$780.00
Juno Beach	66	$183,873,234.00	704	$274,128,356.00	102	$28,259,389.00	60	$0.00
Jupiter	823	$1,165,784,244.00	17,663	$5,196,069,630.00	1,624	$360,298,991.00	1,433	$4,457,607.00
Jupiter Inlet Colony	5	$1,600,000.00	234	$244,197,187.00	4	$4,399,471.00	2	$0.00
Lake Clarke Shores	28	$20,251,504.00	1,223	$194,473,112.00	31	$2,632,326.00	10	$0.00
Lake Park	364	$274,704,120.00	1,571	$238,020,003.00	68	$23,529,508.00	21	$7,117.00
Lake Worth	74	$35,703,650.00	785	$143,962,168.00	21	$3,001,254.00	13	$0.00
Loxahatchee Groves	190	$46,012,823.00	788	$165,343,217.00	184	$52,553,707.00	396	$55,700,924.00
Mangonia Park	166	$141,398,452.00	207	$26,298,618.00	88	$13,273,225.00	5	$0.00
North Palm Beach	171	$188,831,863.00	2,770	$965,323,627.00	54	$38,211,861.00	101	$122,170.00
Pahokee	232	$17,212,750.00	1,135	$66,458,464.00	298	$3,851,277.00	124	$6,924,778.00
Palm Beach	281	$1,211,428,465.00	2,358	$8,516,815,089.00	185	$603,218,742.00	38	$26,159.00
Palm Beach Gardens	718	$2,236,515,617.00	19,287	$6,761,065,630.00	1,050	$257,609,689.00	1,894	$5,566,577.00
Palm Beach Shores	64	$56,171,853.00	372	$144,646,972.00	25	$17,604,731.00	8	$0.00
Palm Springs	155	$114,620,249.00	2,908	$357,950,109.00	99	$18,886,040.00	38	$49,644.00
Riviera Beach	1,172	$927,701,537.00	9,792	$1,646,970,987.00	839	$112,026,122.00	152	$1,625,074.00
Royal Palm Beach	404	$640,945,158.00	10,597	$1,750,980,808.00	451	$91,430,707.00	415	$1,524,986.00
Tequesta	129	$195,417,461.00	1,865	$512,429,808.00	47	$41,336,721.00	58	$0.00
Wellington	687	$1,057,350,100.00	17,632	$5,136,345,827.00	1,071	$289,603,288.00	1,101	$16,142,650.00
West Palm Beach	3,151	$3,820,434,322.00	25,101	$5,158,134,861.00	1,310	$389,310,938.00	903	$1,116,934.00
Unincorporated	4,453	$2,461,019,547.00	52,153	$11,603,978,092.00	6,354	$1,037,673,987.00	3,904	$258,423,647.00

Value of Parcels at Risk from Storm Surge

Jurisdiction	Commercial Property	Assessed Value	Residential Property	Assessed Value	Vacant Property	Assessed Value	Ag/Open Space Property	Assessed Value
Boca Raton	81	$129,997,593.00	4,511	$2,522,742,445.00	183	$114,934,093.00	90	$743.00
Boynton Beach	116	$52,092,878.00	379	$119,680,189.00	117	$33,468,707.00	44	$135,634.00
Briny Breezes	14	$0.00	0	$0.00	2	$297,910.00	0	$0.00
Delray Beach	91	$119,646,923.00	1,721	$1,526,125,205.00	90	$115,585,430.00	68	$130,799.00
Gulf Stream	19	$15,387,576.00	257	$569,107,309.00	15	$25,502,228.00	0	$0.00
Highland Beach	11	$16,600,000.00	380	$594,436,112.00	49	$41,834,076.00	32	$321,759.00
Hypoluxo	10	$2,252,582.00	424	$124,068,322.00	5	$1,109,092.00	11	$0.00
Juno Beach	66	$183,873,234.00	704	$274,128,356.00	102	$28,259,389.00	60	$0.00
Jupiter	486	$582,362,734.00	8,985	$2,989,235,895.00	341	$146,559,995.00	590	$1,752,561.00
Jupiter Inlet Colony	2	$0.00	108	$82,301,979.00	2	$943,938.00	1	$0.00
Lake Park	34	$15,516,026.00	160	$56,533,615.00	6	$273,826.00	5	$0.00
Lake Worth	28	$11,191,488.00	1,151	$247,639,017.00	38	$9,055,961.00	10	$619.00
Lantana	54	$53,272,701.00	469	$293,628,208.00	38	$25,806,052.00	6	$13.00
Manalapan	9	$128,166,296.00	190	$743,570,994.00	31	$117,704,906.00	3	$300.00
North Palm Beach	108	$132,256,716.00	2,382	$885,562,372.00	40	$29,174,881.00	88	$87,310.00
Ocean Ridge	34	$6,281,532.00	640	$551,078,161.00	82	$25,035,346.00	28	$55.00
Palm Beach	292	$1,319,404,452.00	2,411	$8,560,048,471.00	195	$618,834,978.00	50	$61,879.00
Palm Beach Gardens	218	$371,280,385.00	1,521	$540,350,492.00	18	$17,366,182.00	133	$600.00
Palm Beach Shores	64	$56,171,853.00	372	$144,646,972.00	25	$17,604,731.00	8	$0.00
Riviera Beach	95	$61,068,396.00	993	$331,239,383.00	101	$40,580,831.00	43	$320,650.00
South Palm Beach	3	$5,221,940.00	19	$9,871,949.00	0	$0.00	5	$15,003.00
Tequesta	20	$9,782,541.00	786	$281,523,109.00	14	$3,700,147.00	18	$0.00
West Palm Beach	87	$336,873,803.00	1,168	$452,791,157.00	71	$41,675,836.00	13	$918.00
Unincorporated	230	$116,720,180.00	5,243	$3,036,419,070.00	274	$180,716,903.00	357	$3,930,587.00

Value of Parcels at Risk from Transportation Hazards

Jurisdiction	Commercial	Assessed Value	Residential	Assessed Value	Vacant	Assessed Value	Ag/Open	Assessed Value
Atlantis	24	$123,387,500.00	348	$76,441,499.00	2	$992,935.00	5	$300.00
Belle Glade	550	$84,825,679.00	2,259	$159,076,115.00	494	$7,721,261.00	34	$965,939.00
Boca Raton	1,231	$4,635,307,455.00	17,588	$7,208,211,434.00	864	$353,369,444.00	564	$13,193.00
Boynton Beach	1,054	$911,953,042.00	13,414	$1,776,647,578.00	1,389	$221,454,500.00	463	$803,998.00
Briny Breezes	14	$0.00	0	$0.00	2	$297,910.00	0	$0.00
Cloud Lake	6	$0.00	48	$6,456,750.00	8	$948,879.00	0	$0.00
Delray Beach	1,367	$1,468,270,656.00	11,042	$3,413,869,100.00	944	$295,448,292.00	398	$2,640,032.00
Glen Ridge	9	$2,795,600.00	80	$14,647,276.00	9	$1,935,580.00	1	$1,650.00
Haverhill	0	$0.00	17	$2,479,953.00	0	$0.00	1	$0.00
Hypoluxo	27	$16,353,234.00	630	$149,967,628.00	51	$4,166,978.00	30	$0.00
Jupiter	616	$836,590,167.00	10,907	$3,453,383,285.00	1,092	$283,968,586.00	965	$2,970,452.00
Jupiter Inlet Colony	3	$0.00	231	$237,926,701.00	4	$4,399,471.00	1	$0.00
Lake Clarke Shores	29	$20,251,504.00	1,396	$226,804,915.00	31	$2,632,326.00	9	$0.00
Lake Park	316	$225,707,612.00	1,472	$195,254,996.00	58	$22,182,289.00	17	$6,475.00
Lake Worth	1,074	$463,189,657.00	8,822	$1,323,465,763.00	559	$64,887,817.00	45	$99,026.00
Lantana	209	$194,435,170.00	2,712	$563,200,523.00	73	$37,060,665.00	21	$3,573.00
Manalapan	9	$128,166,296.00	190	$743,570,994.00	31	$117,704,906.00	3	$300.00
Mangonia Park	166	$141,398,452.00	207	$26,298,618.00	88	$13,273,225.00	5	$0.00
North Palm Beach	72	$99,026.00	1,603	$324,242,500.00	29	$10,386,251.00	23	$5,146.00
Ocean Ridge	34	$6,281,532.00	640	$551,078,161.00	82	$25,035,346.00	28	$55.00
Pahokee	183	$13,939,853.00	924	$50,199,577.00	258	$3,220,475.00	71	$5,428,896.00
Palm Beach	83	$293,553,987.00	596	$1,872,338,672.00	46	$114,269,219.00	10	$362.00
Palm Beach Gardens	420	$1,753,037,783.00	17,392	$5,655,787,215.00	978	$218,051,965.00	1,561	$4,768,341.00
Palm Beach Shores	8	$29,128,567.00	76	$35,249,935.00	3	$2,427,540.00	0	$0.00
Palm Springs	12	$8,302,696.00	432	$39,543,552.00	9	$1,195,291.00	8	$0.00
Riviera Beach	1,124	$865,707,449.00	9,058	$1,300,841,985.00	810	$80,286,428.00	213	$1,300,898.00
South Bay	127	$17,639,627.00	690	$36,530,949.00	151	$3,354,729.00	20	$376,781.00

Value of Parcels at Risk from Transportation Hazards

South Palm Beach	3	$5,221,940.00	19	$9,871,949.00	0	$0.00	5	$15,003.00
Tequesta	128	$195,417,461.00	938	$217,182,802.00	38	$38,084,845.00	46	$0.00
Wellington	4	$0.00	1721	$525,586,593.00	10	$398,000.00	103	$0.00
West Palm Beach	3009	$3,681,039,401.00	19930	$3,600,305,481.00	1206	$359,334,882.00	424	$494,897.00
Unincorporated	2442	$2,627,288,385.00	51432	$12,293,515,442.00	2869	$492,011,341.00	4444	$217,093,339.00

Value of Parcels at Risk from Tsunamis

Jurisdiction	Commercial Property	Assessed Value	Residential Property	Assessed Value	Vacant Property	Assessed Value	Ag/Open Space Property	Assessed Value
Boca Raton	367	$1,070,030,480.00	5,305	$3,682,803,001.00	260	$244,939,883.00	129	$831.00
Boynton Beach	445	$212,294,432.00	2,383	$448,896,300.00	375	$154,057,803.00	56	$80,732.00
Briny Breezes	0	$0.00	0	$0.00	2	$297,910.00	0	$0.00
Delray Beach	740	$825,459,572.00	3,909	$2,102,521,081.00	399	$202,616,412.00	177	$130,894.00
Gulf Stream	21	$15,387,576.00	309	$594,599,350.00	19	$26,013,251.00	1	$0.00
Highland Beach	11	$16,600,000.00	380	$594,436,112.00	49	$41,834,076.00	32	$321,759.00
Hypoluxo	21	$13,956,598.00	493	$139,519,578.00	8	$1,417,964.00	26	$0.00
Juno Beach	59	$87,235,401.00	552	$209,787,705.00	102	$28,259,389.00	44	$0.00
Jupiter	159	$219,719,001.00	3,201	$793,442,670.00	58	$54,814,385.00	2,254	$1,496,964.00
Jupiter Inlet Colony	5	$1,600,000.00	234	$244,197,187.00	4	$4,399,471.00	2	$0.00
Lake Worth	85	$36,823,840.00	1,999	$424,522,367.00	97	$18,293,960.00	20	$89,943.00
Lantana	84	$74,167,207.00	599	$323,169,764.00	42	$27,013,407.00	12	$3,527.00
Manalapan	9	$128,166,296.00	190	$743,570,994.00	31	$117,704,906.00	3	$300.00
North Palm Beach	0	$0.00	0	$0.00	0	$0.00	7	$74,622.00
Ocean Ridge	34	$6,281,532.00	640	$551,078,161.00	82	$25,035,346.00	28	$55.00
Palm Beach	292	$1,319,404,452.00	2,411	$8,560,048,471.00	195	$618,834,978.00	50	$61,879.00
Palm Beach Gardens	3	$49,508,870.00	0	$0.00	0	$0.00	0	$0.00
Palm Beach Shores	64	$56,171,853.00	372	$144,646,972.00	25	$17,604,731.00	8	$0.00
Riviera Beach	45	$27,646,737.00	642	$280,002,810.00	24	$9,730,057.00	32	$320,650.00
South Palm Beach	3	$5,221,940.00	19	$9,871,949.00	0	$0.00	5	$15,003.00
Tequesta	93	$189,346,604.00	612	$116,803,574.00	31	$36,518,450.00	7	$0.00
West Palm Beach	39	$144,058,666.00	1,575	$559,807,444.00	99	$56,227,939.00	16	$1,218.00
Unincorporated	70	$73,669,875.00	1,532	$1,642,989,693.00	111	$109,912,840.00	87	$3,810,487.00

Value of Parcels at Risk from Wellfield Contamination/Depletion

Jurisdiction	Commercial Property	Assessed Value	Residential Property	Assessed Value	Vacant Property	Assessed Value	Ag/Open Space Property	Assessed Value
Boca Raton	88	$671,900,665.00	4,800	$1,830,556,717.00	292	$18,358,421.00	125	$7,422.00
Boynton Beach	190	$93,131,197.00	2,737	$318,561,148.00	69	$20,899,651.00	27	$310,091.00
Delray Beach	943	$807,927,627.00	4,474	$899,117,508.00	657	$128,837,506.00	119	$1,249,984.00
Golf	3	$1,206,575.00	0	$0.00	0	$0.00	0	$0.00
Greenacres	12	$21,116,397.00	953	$158,634,600.00	17	$3,649,210.00	69	$0.00
Haverhill	0	$0.00	137	$16,861,546.00	4	$367,910.00	2	$0.00
Hypoluxo	22	$13,956,598.00	604	$143,419,770.00	49	$3,509,478.00	23	$0.00
Jupiter	470	$796,469,271.00	12,524	$3,704,791,329.00	1,460	$209,851,495.00	1,078	$2,834,456.00
Lake Park	298	$197,538,961.00	1,232	$168,379,344.00	55	$22,052,012.00	14	$6,185.00
Lake Worth	927	$383,620,217.00	7,047	$977,768,166.00	484	$43,986,320.00	22	$89,324.00
Lantana	182	$131,663,535.00	2,306	$297,535,358.00	52	$20,444,850.00	15	$3,573.00
Mangonia Park	76	$52,562,684.00	63	$4,401,149.00	9	$2,638,826.00	1	$0.00
North Palm Beach	46	$29,178,342.00	457	$65,145,852.00	9	$4,048,199.00	9	$300.00
Palm Beach Gardens	310	$970,891,041.00	14,450	$4,979,137,093.00	956	$186,426,374.00	1,360	$4,600,636.00
Palm Springs	9	$4,267,596.00	1,234	$150,079,375.00	7	$429,759.00	3	$0.00
Riviera Beach	637	$377,797,671.00	7,030	$1,075,085,215.00	581	$50,448,833.00	125	$1,304,014.00
Royal Palm Beach	1	$76,569.00	550	$74,420,603.00	4	$255,885.00	0	$0.00
Tequesta	0	$0.00	45	$4,892,454.00	0	$0.00	0	$0.00
Wellington	3	$3,524.00	232	$83,923,227.00	22	$3,260,000.00	30	$0.00
West Palm Beach	55	$97,772,995.00	2,511	$556,095,896.00	18	$5,459,125.00	174	$281.00
Unincorporated	542	$784,720,420.00	27,837	$5,985,225,529.00	1,057	$162,370,814.00	1,628	$5,031,365.00

Value of Parcels at Risk from Wildland-Urban Interface Fires

Jurisdiction	Commercial Property	Assessed Value	Residential Property	Assessed Value	Vacant Property	Assessed Value	Ag/Open Space Property	Assessed Value
Loxahatchee Groves	190	$46,012,823.00	788	$165,343,217.00	184	$52,553,707.00	396	$55,700,924.00
Wellington	935	$1,189,231,949.00	18439	$5,503,587,408.00	1233	$408,454,209.00	1168	$21,279,999.00
Unincorporated	1820	$147,850,423.00	19157	$3,849,488,860.00	3607	$494,739,232.00	639	$75,943,563.00

Improved Property Values by Jurisdiction

Jurisdiction	Commercial Properties	Comm. Improved Value	Residential Property	Res. Improved Value	Total Improved Value
Atlantis	34	$150,943,621.00	979	$275,444,538.00	$426,388,159.00
Belle Glade	616	$103,977,172.00	2,705	$203,447,474.00	$307,424,646.00
Boca Raton	1,393	$5,671,436,173.00	22,863	$9,516,856,766.00	$15,188,292,939.00
Boynton Beach	1,208	$1,423,276,457.00	18,193	$2,767,069,123.00	$4,190,345,580.00
Briny Breezes	0	$0.00	0	$1,700,000.00	$1,700,000.00
Cloud Lake	6	$0.00	48	$6,456,750.00	$6,456,750.00
Delray Beach	1,500	$1,874,938,546.00	15,342	$4,444,042,833.00	$6,318,981,379.00
Glen Ridge	9	$2,795,600.00	80	$14,647,276.00	$17,442,876.00
Golf	51	$33,473,729.00	151	$105,577,856.00	$139,051,585.00
Greenacres	226	$344,218,761.00	8,811	$1,160,134,817.00	$1,504,353,578.00
Gulf Stream	21	$15,387,576.00	309	$594,599,350.00	$609,986,926.00
Haverhill	24	$15,950,001.00	559	$73,573,964.00	$89,523,965.00
Highland Beach	11	$16,600,000.00	380	$594,436,112.00	$611,036,112.00
Hypoluxo	27	$16,353,234.00	630	$149,967,628.00	$166,320,862.00
Juno Beach	66	$183,873,234.00	704	$274,128,356.00	$458,001,590.00
Jupiter	823	$1,165,784,244.00	17,663	$5,196,069,630.00	$6,361,853,874.00
Jupiter Inlet Colony	5	$1,600,000.00	234	$244,197,187.00	$245,797,187.00
Lake Clarke Shores	29	$20,251,504.00	1,396	$226,804,915.00	$247,056,419.00
Lake Park	364	$274,704,120.00	1,571	$238,020,003.00	$512,724,123.00
Lake Worth	1,082	$463,266,658.00	8,825	$1,324,215,139.00	$1,787,481,797.00
Lantana	209	$194,435,170.00	2,712	$563,200,523.00	$757,635,693.00
Loxahatchee Groves	190	$46,012,823.00	788	$165,343,217.00	$211,356,040.00
Manalapan	9	$128,166,296.00	190	$743,570,994.00	$871,737,290.00
Mangonia Park	166	$141,398,452.00	207	$26,298,618.00	$167,697,070.00
North Palm Beach	171	$188,831,863.00	2,770	$965,323,627.00	$1,154,155,490.00
Ocean Ridge	34	$6,281,532.00	640	$551,078,161.00	$557,359,693.00
Pahokee	232	$17,212,750.00	1,135	$66,458,464.00	$83,671,214.00

Improved Property Values by Jurisdiction

Palm Beach	292	$1,319,404,452.00	2,411	$8,560,048,471.00	$9,879,452,923.00
Palm Beach Gardens	718	$2,236,515,617.00	19,287	$6,761,065,630.00	$8,997,581,247.00
Palm Beach Shores	64	$56,171,853.00	372	$144,646,972.00	$200,818,825.00
Palm Springs	279	$215,581,145.00	4,154	$511,098,918.00	$726,680,063.00
Riviera Beach	1,172	$927,701,537.00	9,792	$1,646,970,987.00	$2,574,672,524.00
Royal Palm Beach	404	$640,945,158.00	10,597	$1,750,980,808.00	$2,391,925,966.00
South Bay	131	$17,639,627.00	690	$36,530,949.00	$54,170,576.00
South Palm Beach	3	$5,221,940.00	19	$9,871,949.00	$15,093,889.00
Tequesta	129	$195,417,461.00	1,865	$512,429,808.00	$707,847,269.00
Wellington	935	$1,189,231,949.00	18,439	$5,503,587,408.00	$6,692,819,357.00
West Palm Beach	3,143	$3,820,247,143.00	25,104	$5,158,812,624.00	$8,979,059,767.00
Unincorporated	8,460	$6,482,508,406.00	163,227	$37,920,729,474.00	$44,403,237,880.00
Total	**24,236**	**$29,607,755,804.00**	**365,842**	**$99,009,437,319.00**	**$128,617,193,123.00**

Estimated Property Dollar Loss by Jurisdiction under Various Loss Scenarios

Jurisdiction	Assumed Loss				
	1% Loss	5% Loss	10% Loss	25% Loss	75% Loss
Atlantis	$4,263,881.59	$21,319,407.95	$42,638,815.90	$106,597,039.75	$319,791,119.25
Belle Glade	$3,074,246.46	$15,371,232.30	$30,742,464.60	$76,856,161.50	$230,568,484.50
Boca Raton	$151,882,929.39	$759,414,646.95	$1,518,829,293.90	$3,797,073,234.75	$11,391,219,704.25
Boynton Beach	$41,903,455.80	$209,517,279.00	$419,034,558.00	$1,047,586,395.00	$3,142,759,185.00
Briny Breezes	$17,000.00	$85,000.00	$170,000.00	$425,000.00	$1,275,000.00
Cloud Lake	$64,567.50	$322,837.50	$645,675.00	$1,614,187.50	$4,842,562.50
Delray Beach	$63,189,813.79	$315,949,068.95	$631,898,137.90	$1,579,745,344.75	$4,739,236,034.25
Glen Ridge	$174,428.76	$872,143.80	$1,744,287.60	$4,360,719.00	$13,082,157.00
Golf	$1,390,515.85	$6,952,579.25	$13,905,158.50	$34,762,896.25	$104,288,688.75
Greenacres	$15,043,535.78	$75,217,678.90	$150,435,357.80	$376,088,394.50	$1,128,265,183.50
Gulf Stream	$6,099,869.26	$30,499,346.30	$60,998,692.60	$152,496,731.50	$457,490,194.50
Haverhill	$895,239.65	$4,476,198.25	$8,952,396.50	$22,380,991.25	$67,142,973.75
Highland Beach	$6,110,361.12	$30,551,805.60	$61,103,611.20	$152,759,028.00	$458,277,084.00
Hypoluxo	$1,663,208.62	$8,316,043.10	$16,632,086.20	$41,580,215.50	$124,740,646.50
Juno Beach	$4,580,015.90	$22,900,079.50	$45,800,159.00	$114,500,397.50	$343,501,192.50
Jupiter	$63,618,538.74	$318,092,693.70	$636,185,387.40	$1,590,463,468.50	$4,771,390,405.50
Jupiter Inlet	$2,457,971.87	$12,289,859.35	$24,579,718.70	$61,449,296.75	$184,347,890.25
Lake Clarke	$2,470,564.19	$12,352,820.95	$24,705,641.90	$61,764,104.75	$185,292,314.25
Lake Park	$5,127,241.23	$25,636,206.15	$51,272,412.30	$128,181,030.75	$384,543,092.25
Lake Worth	$17,874,817.97	$89,374,089.85	$178,748,179.70	$446,870,449.25	$1,340,611,347.75

Estimated Property Dollar Loss by Jurisdiction under Various Loss Scenarios

Lantana	$7,576,356.93	$37,881,784.65	$75,763,569.30	$189,408,923.25	$568,226,769.75
Loxahatchee	$2,113,560.40	$10,567,802.00	$21,135,604.00	$52,839,010.00	$158,517,030.00
Manalapan	$8,717,372.90	$43,586,864.50	$87,173,729.00	$217,934,322.50	$653,802,967.50
Mangonia Park	$1,676,970.70	$8,384,853.50	$16,769,707.00	$41,924,267.50	$125,772,802.50
North Palm	$11,541,554.90	$57,707,774.50	$115,415,549.00	$288,538,872.50	$865,616,617.50
Ocean Ridge	$5,573,596.93	$27,867,984.65	$55,735,969.30	$139,339,923.25	$418,019,769.75
Pahokee	$836,712.14	$4,183,560.70	$8,367,121.40	$20,917,803.50	$62,753,410.50
Palm Beach	$98,794,529.23	$493,972,646.15	$987,945,292.30	$2,469,863,230.75	$7,409,589,692.25
Palm Beach	$89,975,812.47	$449,879,062.35	$899,758,124.70	$2,249,395,311.75	$6,748,185,935.25
Palm Beach	$2,008,188.25	$10,040,941.25	$20,081,882.50	$50,204,706.25	$150,614,118.75
Palm Springs	$7,266,800.63	$36,334,003.15	$72,668,006.30	$181,670,015.75	$545,010,047.25
Riviera Beach	$25,746,725.24	$128,733,626.20	$257,467,252.40	$643,668,131.00	$1,931,004,393.00
Royal Palm	$23,919,259.66	$119,596,298.30	$239,192,596.60	$597,981,491.50	$1,793,944,474.50
South Bay	$541,705.76	$2,708,528.80	$5,417,057.60	$13,542,644.00	$40,627,932.00
South Palm	$150,938.89	$754,694.45	$1,509,388.90	$3,773,472.25	$11,320,416.75
Tequesta	$7,078,472.69	$35,392,363.45	$70,784,726.90	$176,961,817.25	$530,885,451.75
Wellington	$66,928,193.57	$334,640,967.85	$669,281,935.70	$1,673,204,839.25	$5,019,614,517.75
West Palm	$89,790,597.67	$448,952,988.35	$897,905,976.70	$2,244,764,941.75	$6,734,294,825.25
Unincorporated	$444,032,378.80	$2,220,161,894.00	$4,440,323,788.00	$11,100,809,470.00	$33,302,428,410.00
Total	**$1,286,171,931.23**	**$6,430,859,656.15**	**$12,861,719,312.30**	**$32,154,298,280.75**	**$96,462,894,842.25**

Number and Value of Residential and Commercial Properties Countywide at Risk from Select Hazards

An estimated total 390,000 residential and commercial properties valued at $128.7 billion are at risk from a countywide hurricane.

Nearly 148,000 residential properties (40.4% of county residences) valued at $28.4 billion and nearly 7,700 commercial properties (26% of county commercial properties) valued at $7.7 billion are located in historic flood areas of the county. Just under 40% of all residential and commercial properties are located in historic flood areas of the county.

Approximately 47,000 residential properties valued at $22.7 billion and 3,200 commercial properties valued at $6.2 billion are situated in the evacuation zone. Approximately 13% of county residential and commercial properties are located in Evacuation A (Category 1 & 2 Hurricane) & B (Category 3, 4, 5 Hurricane) zones.

The table below shows a breakdown of the number and values of properties in select hazard areas.

Properties & Value of Properties at Risk from Select Hazards

Hazard	Residential Properties at Risk		Commercial Properties at Risk	
	Total Properties	Total $ Value	Total Properties	Total $ Value
Historical Flood Areas	147,824	28,425,975,054	7,681	7,722,358,961
Evacuation Zones	46,789	22,727,963,626	3,274	6,205,130,738
Coastal Erosion	4,157	7,895,820,665	350	1,069,403,511
Wildfire	5,024	955,747,148	2,945	1,383,095
Countywide Hurricane	365,842	99,009,737,319	24,236	29,607,755,804

Source: PAPA Property Appraisers database and GIS hazard boundaries

Value of Residential & Commercial Properties at Risk Including Contents

Total contents at risk can be approximated by adding 80% to the residential property values and 175% to the commercial property values above. This yields a worst case scenario for residential property at risk of $178,213,927,174 and a worst case for commercial property of $81,421,328,461. Theoretically, the estimated total value of residential and commercial property at risk from a worst case countywide threat is $259.6 billion. A breakdown by selected hazards is presented below.

Estimated Value of Residential & Commercial Properties Including Contents at Risk from Select Hazards

Hazard	Value Residential Properties Contents (@80% of Prop Value)	Value Commercial Properties Contents (@175% Prop Value)	Value Residential Properties Incl. Contents	Value Commercial Properties Incl. Contents	Total Value Residential & Commercial Properties Incl. Contents
Historical Flood Areas	22,740,780,043	13,514,128,182	51,166,755,097	21,236,487,143	72,403,242,240
Evacuation Zone	18,182,370,901	10,858,978,791	40,910,274,527	17,064,109,529	57,974,384,056
Coastal Erosion	6,316,656,532	1,871,456,144	26,078,191,566	2,940,859,655	29,019,051,221
Wildfire	764,597,718	2,420,416	1,720,344,866	6,803,511	1,727,148,377
Countywide Hurricane	79,206,189,855	51,813,572,657	178,213,927,174	81,421,328,461	259,635,255,635

Estimated Value of Residential & Commercial Properties Including Contents at Risk from Select Hazards

Approximately 28% of the total value of property at risk, including contents, resides in historic flood areas of the county. Twenty three (23) percent of property value at risk are located in the Evacuation Zone.

SECTION 4: INVENTORY AND EVALUATION OF EXISTING HAZARD MANAGEMENT GOALS, POLICIES, PROCEDURES, ORDINANCES, PROJECTS, AND ACTIVITIES

4.1 GOVERNMENTAL

4.1.1 Federal

From the federal perspective, the National Mitigation Strategy is its most important hazard mitigation initiative due to the comprehensive nature of the effort. It has been developed to provide a framework for reducing the exposure of all Americans to the catastrophic losses caused by natural disasters. Federal mitigation action planning is directed toward protecting U.S. citizens by:

- Utilizing the scientific and technical knowledge resulting from the research efforts of the National Institute of Standards and Technology (NIST), and integrating it into local fire and building codes in order to reduce major urban fires and building failures;

- Establishing under the NFIP a national program for floodplain management with strong mitigation provisions to significantly reduce flood losses;

- Developing a national system of emergency management with a coordinated Federal Response Plan to replace the piecemeal approach to recovery only after disaster strikes;

- Establishing a National Earthquake Hazards Reduction Program to increase the availability of applied seismic research, develop state seismic hazard reduction programs, and improve training and education on methods to the risk of loss of life and property to earthquakes;

- Establishing a National Hurricane Program to minimize loss of life and property from hurricanes through better property protection, warning and evacuation procedures, and training and education;

- Developing a National Inventory of Dams identifying high-hazard dams and encouraging the development of warning systems and emergency plans for many of these facilities;

- Establishing an effective program of assistance to state and local governments for post-disaster mitigation actions through the Stafford Act's Section 404, Hazard Mitigation Grant Program, and under Section 406 in terms of the mitigation of damage to public facilities; and

- Establishing a nationwide program of federal, state, and local preparedness consisting of trained personnel, facilities, equipment, training, and exercises to save lives and protect property through warning, evacuation, shelter, and other post-disaster actions.

In addition to natural disasters, at the federal level considerable attention has been focused on the release of hazardous materials. In 1986, the United States Congress enacted the Emergency Planning and Community Right-to-Know Act. It imposed upon state and local

governments planning and preparedness requirements for emergencies involving the release of hazardous materials.

The role of the federal government in response to an emergency involving the release of hazardous materials is to support local and state emergency operations. Activation of the federal Regional Response Team (RRT) provides access to federal resources not available at the state and local levels. An on-scene coordinator is designated to manage federal resources and support.

The national warning and communications center for emergencies involving the release of hazardous materials. It is manned 24 hours a day, and is located at the U.S. Coast Guard headquarters in Washington, D.C.

4.1.2 State

While many state agencies have significant roles in disaster response and mitigation, the Florida Department of Community Affairs (FDCA) has primary responsibility. Several years ago, the FDCA developed the Florida Hazard Mitigation Strategy (FHMS). Its purpose is to establish a comprehensive program for the FDCA to effectively and efficiently mobilize and coordinate the state's services and resources to make Florida's communities more resistant to the human and economic impacts of disasters. The Strategy achieves this purpose by the following actions:

- Improving the understanding and awareness of the natural, technological, and societal hazards faced by the people, property, businesses, and institutions within the State of Florida;

- Defining the goals, objectives and priorities of the FDCA for hazard mitigation and post-disaster redevelopment in Florida;

- Developing and implementing programs to promote hazard mitigation throughout the state;

- Enhancing programs among state agencies and local governments to more effectively guide post-disaster redevelopment to minimize community vulnerability to future disasters;

- Increasing the identification of mitigation opportunities and maximizing the utilization of available funding;

- Improving coordination of programs within the FDCA related to hazard mitigation and post-disaster redevelopment;

- Facilitating coordination between the FDCA and other federal, state, regional, local and private sector programs related to hazard mitigation and post-disaster redevelopment;

- Describing clearly the State of Florida's hazards mitigation program-implementation tasks and establishing schedules for their completion;

- Designating who is responsible for the development and implementation of hazard mitigation and post-disaster redevelopment programs;

- Encouraging public participation and involvement in the development and implementation of the strategy; and

- Identifying and prioritizing hazard mitigation and redevelopment initiatives, programs, and projects prior to a disaster.

The FHMS provides the FDCA with operational and programmatic guidance to promote the goals and objectives of the nationally based National Mitigation Strategy as coordinated by FEMA.

The FHMS provides the FDCA with operational and programmatic guidance to promote the goals and objectives of the nationally based National Mitigation Strategy as coordinated by FEMA.

The FDCA has the lead role in coordinating state resources to support local government unless the scope of the emergency warrants a higher degree of state involvement. This may occur when emergencies involve multi-jurisdictional hazards, when local governments believe the emergency is beyond the capabilities of local resources, or when the Governor determines there is an overriding concern for the safety of the public. For these situations, the Governor can designate the primary responsibility for emergency response to the state by issuing an Executive Order under the provisions of Section 252.36, Florida Statutes (F.S.).

The DEM is the designated State Warning Point in the event of a hazardous materials incident. As such, the DEM is responsible for receiving notification of an emergency from the county Communications Coordinator, and coordinating the request(s) for county support, if requested. The DEM is responsible for assisting LEPCs in providing warnings and instructions to the general public.

Over the past several years, extensive damage has resulted from wildfire. The Florida Division of Forestry (DOF) has major responsibility for protecting forest lands and the public from the effects of wildfire. Local fire-rescue departments have primary responsibility for structural fires. They also are the first responders to all fires. If the local fire-rescue department has determined that the wildfire event is beyond its capacity to fight, the local fire-rescue department can request assistance from the DOF. When that occurs, an incident command control is established with state and local fire-rescue departments working together to extinguish the wildfire.

4.1.3 Regional

4.1.3.1 Treasure Coast Regional Planning Council

The TCRPC was created under Section 186.501, F.S. The council is multi-county entity encompassing Indian River, Martin, Palm Beach, and St. Lucie Counties. It has responsibility for addressing growth management issues that are multi-jurisdictional in scope. This includes working in cooperation with federal and state agencies planning for emergency management

issues as described in Section 252.34(4) F.S. The TCRPC provides full-time staffing for the District X LEPC. The LEPC is charged with administering regional compliance with hazardous materials reporting and training laws. Its many initiatives include the State Hazardous Materials Training Task Force; District X Hazardous Materials Emergency Plan; training for emergency first response personnel; hospital and hazardous materials response team needs; public hazardous chemical awareness and reporting seminars; public and private sector hazardous materials emergency exercises; and assisting public and private facilities with chemical emergency preparedness planning.

Section 186.507, F.S. directs regional planning councils to prepare strategic regional policy plans. One of the elements that the plan must address is emergency preparedness. The TCRPC promotes mitigation initiatives within Section 5.0, Emergency Preparedness, of its "Strategic Regional Policy Plan". Specific strategies that promote mitigation are summarized below. These strategies and the policies that implement them are listed in the Inventory of Existing Hazard Management Goals, Strategies, and Policies Matrix (**Appendix D**).

- **Strategy 5. 1.1** Direct development away from areas most vulnerable to the effects of natural and manmade disasters.

- **Strategy 5. 2.1** Utilize land use, transportation, and community planning processes to address vulnerability issues.

- **Strategy 5.3.1** Provide shelter space for residents of areas susceptible to flooding from the effects of hurricanes and other storms.

- **Strategy 5.4.1** Develop the mechanisms necessary to ensure that emergency planning agencies have in-put into the local government decision-making process.

- **Strategy 5. 5.1** Initiate disaster preparedness activities which will protect lives and property and reduce evacuation times.

- **Strategy 5. 5.2** Establish mechanisms and regulations necessary for post-disaster reconstruction to occur in a consistent manor making future disasters less destructive to life and property.

4.1.3.2 South Florida Water Management District

The creation of the South Florida Water Management District (SFWMD) along with the four other water management districts were enabled under Section 373.069, F.S. As required under Section 373.036(2), F.S., each district has prepared a district water management plan. The plan provides the overarching vision for the districts. The key elements of the plans are:

- Environmental protection and enhancement;
- Water supply;
- Flood protection; and
- Water quality protection.

One of the purposes of the plan is to provide a framework to address issues of water conservation, extreme drought and flooding. The SFWMD administers several programs that achieve hazard mitigation relative to flooding, hurricanes, and drought. Historically, water management districts were created primarily to mitigate the impacts of flooding. Over the years, the districts' roles have been expanded considerably.

The SFWMD operates and maintains the regional drainage system throughout its jurisdictional area. Local drainage systems are operated by a variety of special districts, private property owners, and local governments. The local systems typically convey water from individual projects to the regional system. The SFWMD's responsibilities for flood protection relate primarily to serving as the regional water conveyance and storage entity. To meet this responsibility the SFWMD maintains an ongoing "Canal Conveyance Capacity" evaluation program. The objectives of the program are:

- To implement a systematic approach to the inspection of all SFWMD canals to determine the need for periodic dredging;
- To inspect all canals over a five year period;
- To establish standard canal survey criteria; and
- To develop construction plans and specifications to implement restoration of conveyance to the canals.

In addition to private applicants, local units of government involved in building new stormwater systems or retrofitting older ones are required to petition the SFWMD for a surface water management permit approval.

Besides flood control, the SFWMD is responsibility for protecting existing water resources from excessive drawdown during periods of drought, and protecting wellfields from contamination. Also, the District administers the "Save Our Rivers" program for the purpose of protecting environmentally sensitive lands. Some of the lands purchased under the program have been situated in the Coastal High Hazard Area (CHHA); thus, in addition to achieving the program's primary goal - the protection of environmentally sensitive resources - the intensity and density of development in CHHAs is reduced.

4.1.4 Local

4.1.4.1 Palm Beach County

Note: A comprehensive profile of the Palm Beach County hazard environment is contained in Special Appendix II. It will become part of the enhanced risk assessment process planned in the near future. Until the new process is approved by the LMS and completed, the following approved profile will continue to be included.

Palm Beach County occupies approximately 1,993 square miles on Florida's southeastern Atlantic coast. It is the second largest county in the state in terms of land area. It has approximately 44 miles of coastal shoreline that fronts the Atlantic Ocean. In addition to the

Atlantic Ocean to its east, the county is bounded by Martin County on the north, Broward County on the south, and Lake Okeechobee and Hendry County to the west.

Palm Beach County is the fifth most populated county in the state. In 2000, the countywide population topped the one million mark at 1,131,184 (U.S. Census). It is projected that by the year 2020, the population will increase nearly 60 percent, to 1,597,535. The majority of the growth is expected between the coastal ridge and Water Conservation Areas.

Thirty-eight municipalities exist in the county. In terms of population, they vary significantly. The City of West Palm Beach is the largest (105,068) while the Town of Cloud Lake (176) is the smallest (see **Table 4.1**). There are three urban centers of population along the coast: in south Palm Beach County, the Boca Raton/Delray Beach/Boynton Beach area (combined population – 216,528); the West Palm Beach/Lake Worth/Riviera Beach area (combined population – 180,218) in central Palm Beach County; and in north Palm Beach County, the Palm Beach Gardens/Jupiter area (combined population – 97,650). Two other centers of population exist in the county. One is the Glades agricultural communities of Belle Glade, Pahokee, and South Bay that border on Lake Okeechobee, (combined population – 24,988). This area has unique needs because of its relative physical isolation from the highly urban area along the Atlantic coast. The other area, rapidly urbanizing, is the Royal Palm Beach/Wellington/Greenacres City (combined population – 117,364) area. Based on projected population, the City of Palm Beach Gardens is expected to experience the largest population increase among the municipalities in Palm Beach County by the year 2020.

As growth has occurred, and the county has become more and more urbanized, large portions of the county have experienced shifting land use patterns, moving from rural, agricultural areas to emerging residential communities, industrial and business employment centers. Land in Palm Beach County is used for three major purposes: urban uses, agriculture, and protecting environmentally sensitive resource areas (e.g., water conservation areas, Corbett Wildlife Refuge, beach areas). **Table 4.2** provides a synopsis of each municipality.

From a hazards perspective, transportation is an important component shaping the overall development pattern. Being a major urban county, the residents and businesses are serviced by many suppliers that depend upon the air, rail, and trucking industries that distribute goods throughout the region. Key major modes of transportation traverse throughout Palm Beach County. The area is served by major transportation corridors (e.g., Interstate 95, Florida Turnpike), three rail lines (Florida East Coast Railroad, CSX Railroad and Tri-Rail), the Port of Palm Beach, and Palm Beach International Airport. As the area becomes more urban and more congested, the potential for transportation accidents will increase.

Within Palm Beach County, the SFWMD operates six major drainage canals: C-18, C-17 (Earman River), C-51 (West Palm Beach Canal), C-16 (Boynton Canal), C-15 (drains 75 square miles in southeastern Palm Beach County), and the Hillsboro Canal. Secondary stormwater drainage canals drain into these regional conveyance system drains. Prior to the construction of the extensive SFWMD canal system, flooding was a common occurrence, and served as a limiting factor to growth. In addition to providing drainage relief, the regional drainage facilities also benefit the area's water resources. Eastern Palm Beach County generally relies upon local rainfall and water stored in the Water Conservation Areas for its water. The regional SFWMD system can move water from Lake Okeechobee, through the Water Conservation Areas, and then to eastern Palm Beach County where the water helps supplement local recharge of urban

wellfields. Palm Beach County's connection to the SFWMD regional system makes it less vulnerable to drought conditions than if it depended solely on local supplies. The south county wellfields would be seriously impacted by the loss of recharge from surface water systems.

It is the goal of Palm Beach County to protect human life and property by limiting public expenditures in areas subject to destruction by natural disasters (especially within the coastal high hazard area), maintaining and implementing an effective emergency management program, and providing for orderly recovery and redevelopment in a post-disaster period. Toward this end, the county and its 38 municipalities maintain a series of coordinated, interlinked preparedness and recovery plans including, but not limited to:

Comprehensive Plans at County and municipal levels which focus on environmental resources management, managed avoidance of development in high hazard areas, and responsible post disaster redevelopment;

Comprehensive Emergency Management Plan, which establishes the framework to ensure that Palm Beach County will be adequately prepared to deal with the hazards threatening the lives and property of county citizens and details pre and post-disaster hazard mitigation strategies, policies and activities;

Unified Local Mitigation Strategy Plan, which describes county-wide strategies and projects for mitigating the effects of identified vulnerabilities to natural, technological and societal hazards;

Continuity of Operations Plan, which ensures the continuance of essential governmental functions during any emergency or situation that might otherwise disrupt normal operations.

Through the Planning Subcommittee of the Local Mitigation Strategy, these and other plans relevant to the protection of life and property are closely monitored in an effort to ensure their language, policies, procedures and practices are compatible, consistent, coordinated, and mutually beneficial.

Palm Beach County and its 38 municipalities participate in a full complement of federal state and local mitigation programs and initiatives. Representative of these programs and initiatives are the Local Mitigation Strategy, Community Rating System, National Flood Insurance Program, Flood Mitigation Assistance Program, CERT, Continuity of Operations, Businesses Addressing Readiness & Recovery program, counter-terrorism and radiological emergency preparedness initiatives, hazardous materials. The collective purpose of these activities is the elimination or mitigation of hazards presenting significant risk to the county and its residents.

Palm Beach County’s Unified Local Mitigation Strategy, and its companion mitigation programs (e.g. Community Rating System program, Flood Mitigation Assistance program, and National Flood Insurance Program are detailed below.

Table 4.1. Population growth in Palm Beach County

City	1980 Census Data	1990 Census Data	2000 Census Data	Increase/ Decrease (1990-2000)	2010 (Estimated)	Increase/ Decrease (2000-2010) (Estimated)	2020 (Estimated)
Atlantis	1,325	1,653	2,005	352	2,166	184	2,189
Belle Glade	16,535	16,177	14,906	-1271	15,499	593	17,812
Boca Raton	49,447	61,492	74,764	13,272	85,296	10,532	86,749
Boynton Beach	35,624	46,194	60,389	14,195	66,952	6,563	72,918
Briny Breezes	387	400	411	11	518	107	1,000
Cloud Lake	160	121	167	46	181	14	186
Delray Beach	34,329	47,181	60,020	12,839	65,781	5,761	77,097
Glen Ridge	235	207	276	69	322	46	328
Golf Village	110	234	230	-4	238	8	301
Greenacres	8,780	18,683	27,569	8,886	32,688	5,119	35,926
Gulfstream	475	690	716	26	826	110	921
Haverhill	1,249	1,058	1,454	396	1,556	102	1,640
Highland Beach	2,030	3,029	3,775	746	4,188	413	5,132
Hypoluxo	573	830	2,015	1,185	2,828	813	2,890
Juno Beach	1,142	2,121	3,262	1,141	3,704	442	3,853
Jupiter	9,868	24,986	39,328	14,342	58,825	19,497	63,785
Jupiter Inlet Colony	378	405	368	-37	401	33	407
Lake Clark Shores	3,174	3,364	3,451	87	3,557	106	3,595
Lake Park	6,909	6,704	8,721	2,017	8,885	164	9,735
Lake Worth	27,048	28,564	35,133	6,569	37,328	2,195	38,766
Lantana	8,048	8,392	9,437	1,045	10,000	653	11,079
Loxahatchee Groves	--	--	--	--	3,000	--	
Manalapan	329	312	321	9	380	59	387
Mangonia Park	1,419	1,453	1,283	-170	1,488	205	1,526
North Palm Beach	11,344	11,343	12,064	721	12,753	689	13,000
Ocean Ridge	1,355	1,570	1,636	66	1,851	215	1,913
Pahokee	6,346	6,822	5,985	-837	6,357	372	9,192
Palm Beach	9,729	9,814	9,676	-138	11,041	1,365	11,343
Palm Beach	14,407	22,965	35,058	12,093	52,694	17,636	68,488

City	1980 Census Data	1990 Census Data	2000 Census Data	Increase/ Decrease (1990-2000)	2010 (Estimated)	Increase/ Decrease (2000-2010) (Estimated)	2020 (Estimated)
Gardens							
Palm Springs	8,166	9,763	11,699	1,936	16,781	5,082	18,062
Riviera Beach	26,489	27,639	29,884	2,245	40,345	10,461	54,223
Royal Palm Beach	3,423	14,589	21,523	6,934	32,000	10,477	36,000
South Bay	3,886	3,558	3,859	301	4,172	313	5,173
South Palm Beach	1,304	1,480	1,531	51	716	-815	1,550
Tequesta	3,685	4,499	5,273	774	5,900	627	6,500
Wellington	--	--	38,216	--	56,183	17,967	62,061
West Palm Beach	63,305	67,643	82,103	14,460	104,270	22,167	112,269
Unincorporated Area	212,303	406,210	521,447	115,237	715,749	194,302	819,992
County Total	576,758	863,518	1,131,184	267,666	1,467,519	334,577	1,657,890
% Population Change County Wide		Increase from 1990 to 2000 = +31%			Increase from 2000 to 2010 = +23% (estimated)		

Table 4.2. Community characteristics within Palm Beach County

Municipality	Location	Urban/Rural	Community Character (Residential/Working /Retirement)	Percent Built Out	Source Year	Economic Base (Agricultural/Business/Industrial/ Residential/Retirement)
Atlantis	Inland	Urban	Residential	NI		Residential/Retirement
Belle Glade	Lakefront	Rural	Working	75	89	Agricultural
Boca Raton	Coastal	Urban	Working	NI		Business
Boynton Beach	Coastal	Urban	Residential	NI		Residential/Commercial
Briny Breezes	Coastal	Urban	Retirement	100	89	Retirement
Cloud Lake	Inland	Urban	Residential	94	89	Retirement/Residential
Delray Beach	Coastal	Urban	Residential/Working	98.9	08	Business
Glen Ridge	Inland	Urban	Residential	86.3	89	Residential/Commercial
Golf	Inland	Urban	Residential	NI		Residential
Greenacres	Inland	Urban	Residential	97	06	Residential/Commercial
Gulfstream	Coastal	Urban	Residential	NI		Residential
Haverhill	Inland	Rural/Urban	Residential	96	89	Residential/Commercial
Highland Beach	Coastal	Urban	Residential/ Retirement	98	08	Residential/Retirement
Hypoluxo	Coastal	Urban	Residential	NI		Retirement
Juno Beach	Coastal	Urban	Residential	90	98	Residential/Commercial
Jupiter	Coastal	Urban	Residential/Working	90	06	Business
Jupiter Inlet Colony	Coastal	Urban	Residential	99	08	Residential/Retirement
Lake Clark Shores	Inland	Urban	Residential	96	89	Residential/Commercial
Lake Park	Coastal	Urban	Working	95	08	Business
Lake Worth	Coastal	Urban	Residential	NI		Commercial
Lantana	Coastal	Urban	Residential	NI		Residential/Commercial
Loxahatchee Groves	Inland	Rural	Residential	NI	09	Residential
Manalapan	Coastal	Urban	Residential	NI		Residential
Mangonia Park	Inland	Urban	Working	NI	89	Business/Industrial
North Palm Beach	Coastal	Urban	Residential	98	89	Residential/Commercial
Ocean Ridge	Coastal	Urban	Residential	NI		Residential/Retirement
Pahokee	Lakefront	Rural	Working	NI		Agricultural

Municipality	Location	Urban/Rural	Community Character (Residential/Working /Retirement)	Percent Built Out	Source Year	Economic Base (Agricultural/Business/Industrial/ Residential/Retirement)
Palm Beach	Coastal	Urban	Residential	97	97	Residential/Commercial
Palm Beach Gardens	Coastal	Urban/Rural	Residential/Working	NI		Agricultural/Business
Palm Beach Shores	Coastal	Urban	Residential	NI		Residential/Retirement
Palm Springs	Inland	Urban	Residential	96	89	Residential/Commercial
Riviera Beach	Coastal	Urban	Working	94		Industrial
Royal Palm Beach	Inland	Urban	Residential	90		Business/Industrial
South Bay	Inland	Rural	Residential/Working	91	89	Agricultural/Industrial
South Palm Beach	Coastal	Urban	Residential	100	89	Residential/Retirement
Tequesta	Coastal	Urban	Residential	95	89	Residential/Retirement
Wellington	Inland	Urban	Residential	NI		Residential
West Palm Beach	Coastal	Urban	Residential	NI		Business

Listing of County Agencies

Within the existing county organizational structure, there are a number of departments that play key roles in hazard mitigation. They include: Department of Public Services - Emergency Management Division, Department of Planning, Zoning and Building Development, and the Department of Environmental Resource Management.

Public Safety Department (PSD). The PSD is composed of six sections: Division of Emergency Management (DEM), Animal Care & Control Division, Consumer Affairs Division, Medical Examiner's Office, Victim Services & Support, and the Youth Affairs Division. During emergency events (e.g., hurricanes), the DEM has the lead role in coordinating the resources and key agencies, non-profits, and private sector entities involved in the emergency situation. In addition, the Board of County Commissioners has assigned the DEM with a new responsibility, being lead agency in the development of the county's Local Mitigation Strategy.

Department of Planning, Zoning & Building (PZ&B). The PZ&B is comprised of three divisions: Planning, Zoning and Building. The PZ&B has primary responsibility for administering the Palm Beach County Comprehensive Plan, and appraising and updating it from time to time. In addition to its long-range planning role, PZ&B is responsible for processing development petitions (i.e., rezoning petitions, site plans). The Building Division issues and oversees compliance with all building permits. The Zoning Division administers the Zoning Ordinance and Lot Clearing Ordinance. The County also issues building permits for one municipality Gulf Stream.

Department of Environmental Resource Management (ERM). The ERM is involved in the evaluation and assessment of environmental projects (e.g., shoreline stabilization projects, beach erosion initiatives), and administering various environmental ordinances (i.e., Irrigation & Water Conservation, Sea Turtle Protection/Sand Preservation Ordinance, Stormwater Pollution Prevention, Vegetation Protection and Preservation, Turnpike Wellfield Protection). To mitigate erosion and enhance and restore the beaches and dunes along its coastal shorelines, the County has developed a Shoreline Protection Plan. The County avoids the use of shoreline armoring (except as a measure of last resort). Preferred alternatives include beach nourishment, dune restoration, and inlet sand transfer.

Department of Facilities Development and Operation. This department is responsible for the development of county buildings including sitting, real estate, design and construction, and operations of the facilities. The Department is responsible for overseeing the construction of capital projects as well as the long-term maintenance of county facilities (e.g., emergency management operations center).

Department of Engineering and Public Works (DEPW). The DEPW is responsible for project design and construction of roads and bridges and street improvements (includes stormwater drainage facilities), and vehicular and pedestrian traffic control, as well as the maintenance of the facilities.

Fire-Rescue Department. The County Fire-Rescue Department provides fire suppression, emergency medical services, fire prevention and community education programs throughout Palm Beach County. The department not only serves the unincorporated county, but many municipalities. They include: Belle Glade, Cloud Lake, Glen Ridge, Haverhill, Juno Beach,

Jupiter, Lake Clarke Shores, Lake Park, Lantana, Manalapan, Pahokee, Royal Palm Beach, South Bay, South Palm Beach and Wellington. The County also has a joint venture agreement with Pahokee and Canal Point. The County also provides fire-rescue dispatch service to Jupiter Inlet Colony, Lake Worth, Mangonia Park, North Palm Beach, Palm Beach Gardens, Palm Springs, Tequesta, and West Palm Beach.

Besides emergency services, the Department provides other types of services. The Bureau of Safety Services is responsible for ensuring that buildings comply with appropriate fire codes. The department also offers public education programs which focus on fire safety guidelines for schools, community groups, and individuals. In addition, the department has responsibility for coordination of fire protection, hazardous materials mitigation, and advance life support services.

Sheriff's Department. Besides their responsibilities for crowd and traffic control during emergency events such as hazardous waste truck spills, the Sheriff's Department is responsible for enforcing the county's dumping ordinance.

Mitigation Policies and Ordinances

Policy Plans. The two key policy plans that address issues related to natural and technological hazards include: the County Comprehensive Plan and the County Comprehensive Emergency Management Plan. They are described, briefly below.

- County Comprehensive Plan

  The Comprehensive Plan serves not only as a blueprint for Palm Beach County's future, but also as the County's policy document. It defines county positions as they relate to development and redevelopment. The Comprehensive Plan contains the nine required plan elements, as set out in Section 163.3161, F.S. They include: Conservation, Coastal Management, Infrastructure (i.e., potable water, sanitary sewer, stormwater management, solid waste, natural aquifer recharge), Future Land Use, Housing, Recreation and Open Space, Transportation, Intergovernmental Coordination, and Capital Improvement. In addition, the county has added several optional elements to the Comprehensive Plan. These addresses: Aviation, Fire-Rescue Services, Health and Human Services. The issue of hazards is dealt with in 9 of 13 plan elements. A complete listing of all hazard mitigation relevant goals, objectives, and policies by plan element for Palm Beach County and jurisdictional Comprehensive Plan are located in **Appendix D**.

  Natural hazards, primarily flooding, hurricanes, drought, and beach erosion are the focus of the Comprehensive Plan. Technological-type hazards such as aquifer contamination and wellfield contamination are addressed in several elements. The Future Land Use Element prohibits increases in density in the Coastal High Hazard Area (CHHA). The Comprehensive Plan contains a Fire-Rescue Services Element that establishes level of service criteria, promotes fire safety inspections and recognizes the importance of having staff continually trained in the most current methods of fire fighting. The Conservation Element focuses on policies related to protection of the shallow aquifer from contamination, as well as protection of areas around wellfields. Air quality is also

addressed in the Conservation Element. While much of the focus of the Element is on reducing vehicle emissions, it is recommended that open burning of land to clear debris needs to be examined closely.

The County through its Coastal Management Element, establishes a public policy stating that the County will not subsidize new or expanded development in the coastal area. Further, it is the County's position that population concentrations be directed "away from known or predicted coastal high-hazard areas, and shall discourage increases in population densities that would reduce hurricane evacuation times." The Coastal Management Element also contains a discussion about emergency preparedness and the lead role of the Division of Emergency Management in directing and controlling activities during any disaster, including preparedness, response and recovery.

The Comprehensive Plan in the Potable Water Sub-element addresses issues related to drought. Water conservation through xeriscaping, requiring use of irrigation quality (I.Q.) reclaimed water for irrigation, and use of increasing block utility rate structures are priority issues for the county. The Potable Water Sub-element also has an objective of replacing smaller 4" water lines with 6" lines to achieve adequate fire flow. It is also a policy of the county to mitigate against droughts by reducing per capita water consumption. Finally, the flooding hazard is addressed primarily in the Stormwater Management Sub-element. The county has adopted the concept of Level of Protection, which is designed to:

- Provide protection from flooding and inundation consistent with the severity of the potential threats to health, safety, welfare, and property;

- Maintain stormwater runoff rates at levels compatible with safe conveyance capacities of receiving waters.

Effective October 25, 2002, Palm Beach County's Comprehensive Plan contains specific language which recognizes, concurs with, and links the county's LMS objectives, processes and project prioritization criteria with capital improvement and coastal management policies and priorities. Key references can be found in Policy 1.4 of the Capital Improvement Element; and **Section 2**, Objective 2.4 and Policies 2.4-e and 3.1-c of the Coastal Management Element. By virtue of their intended purpose to mitigate public hazards, projects carried on the LMS Prioritized Project List are considered to meet the county's standards for categorization as "Essential." The Comprehensive Plan also recognizes that the governing body of the Unified Local Mitigation Strategy program shall be comprised of representatives assigned by each of the 38 municipalities and Palm Beach County and be governed by appropriate policies, procedures and/or either interlocal agreements or resolutions.

- Palm Beach County Comprehensive Emergency Management Plan (CEMP)

The Board of County Commissioners has adopted a CEMP. It is an operations-oriented document that establishes the framework for effective management by range of hazards. They include:

- Hurricanes & Tropical Storms
- Flooding
- Freezes
- Wildfires
- Tornadoes
- Droughts
- Property Loss/Agricultural Hazards
- Hazardous Materials
- Toxic Contamination of Water Supply
- Fixed Nuclear Power Facilities
- Coastal Oil Spill
- Dam Failure
- Terrorism
- Mass Immigration
- Mass Casualty
- Epidemics

The CEMP addresses evacuation in terms of local and regional evacuation, public shelter, post-disaster response and recovery, rapid deployment of resources, communications and warning systems, training exercises, and agency responsibilities. These responsibilities constitute Emergency Support Functions (ESF). See **Table 4.3**. Each ESF is headed by a lead agency which has been selected based on its authorities, resources, and capabilities in the functional area. The ESFs also serve as the primary mechanism through which outside assistance to Palm Beach County is coordinated. At this writing, the ESF terminology is being dropped in favor of terminology consistent with the National Incident Management System (NIMS).

In the Mitigation section of the CEMP, there is extensive language stating the objectives and details of the Local Mitigation Strategy. The mitigation techniques within the two plans include projects, policies, or programs which will reduce, eliminate, or alleviate damage caused by disasters. Moreover, the CEMP and the Local Mitigation Strategy work collectively to improve the community's resistance to damage from known natural, technological, and societal hazards.

Ordinances. Hazard-related ordinances are administered primarily by the PZB, ERM or Fire-Rescue. The list of relevant ordinances includes:

- Irrigation & Water Conservation
- Sea Turtle Protection/Sand Preservation
- Stormwater Pollution Prevention
- Countywide Wellfield Protection
- Turnpike Wellfield Protection
- Lot Clearing
- Zoning
- Building Code
- Fire Prevention Code
- Vegetation Protection and Preservation

Table 4.3. Emergency Support Functions and their designations*

Emergency Support Function	Designation
Transportation	ESF - 1
Communications	ESF - 2
Public Works and Engineering	ESF - 3
Firefighting	ESF - 4
Information and Planning	ESF - 5
Mass Care	ESF - 6
Resource Support	ESF - 7
Health and Medical Services	ESF - 8
Search and Rescue	ESF - 9
Hazardous Materials	ESF - 10
Food and Water	ESF - 11
Energy and Utilities	ESF - 12
Military Support	ESF - 13
Public Information	ESF - 14
Volunteers and Donations	ESF - 15
Law Enforcement and Security	ESF - 16
Animal Care	ESF - 17
Business & Industry	ESF - 18

*At this writing the county is transitioning from an ESF to Incident Command System structure

County Mitigation Plans, Programs Projects/Initiatives

There are a number of projects and initiatives the county has implemented to mitigate potential damage resulting from various hazards. Through Palm Beach County's 1991 $100 Million Environmentally Sensitive Lands Acquisition General Obligation Bond Program, the county has purchased a number of important parcels in the CHHA. Most were purchased because they exhibited environmentally significant habitat; however, the county also gained by reducing the intensity and density of development in a high risk area, the CHHA.

Palm Beach County has also made a statement of the importance of hazard mitigation, by incorporating within its Comprehensive Growth Management Plan policy statements regarding the development of a county-wide Local Mitigation Strategy. In addition to its CEMP, there are special hazard plans that apply to unique situations. They address hazards such as coastal oil

spills, hazardous materials, and airport safety. In addition, in a county that experiences substantial development each year, Fire-Rescue actively participates on the county development review committee. The Fire-Rescue staff reviews and comments on whether there is adequate access to buildings by both personnel and apparatus, and whether there is adequate vehicle ingress and egress.

The Fire-Rescue Department has a significant role relative to hazardous materials. Fire-Rescue staff pre-identifies hazardous chemical waste facilities and pre-plans emergency response. In addition, staff works with the facility managers by assisting in writing their emergency operations/evacuation plans.

Also, as many other counties have done since Hurricane Andrew, the county has upgraded its building code. It requires that all structures be able to withstand 110 mph wind load. The code now requires a finished floor elevation at 6 inches above minimum 100-year flood level. The county's building code also requires corrosion resistant hurricane clips, water resistant adhesives for shingles, and trusses manufactured in accordance with local wind models. Unlike many counties in Florida, Palm Beach County also requires shutters for all new single family homes, and glazing of exterior windows to achieve impact resistance from windborne debris.

Another mitigative activity of Fire-Rescue involves pre-planning for hurricanes. This involves identifying "target hazards." These are buildings/developments that are highly vulnerable to damage during a hurricane. In pre-storm stage, Fire-Rescue personnel identify residents that did NOT evacuate, and where they live in the event Fire-Rescue staff has to search for individuals following the storm event.

All fire stations have been fitted with shutters and have emergency generator and LP gas power sources. Also, all new facilities are being built to updated standards and have fire sprinkler/alarms.

National Flood Insurance Programs (NFIP)

The function of NFIP is to provide flood insurance to homes and businesses located in floodplains at a reasonable cost, and to encourage the location of new development away from the floodplain. The program is based upon mapping areas of flood risk, and requiring local implementation to reduce that risk, primarily through guidance of new development in floodplains.

Congress created the NFIP in 1968 to minimize response and recovery costs and to reduce the loss of life and damage to property caused by flooding. The Federal Emergency Management Agency (FEMA) administers the NFIP. The two fundamental objectives of NFIP are to:

1. Ensure that new buildings will be free from flood damage; and
2. Prevent new developments from increasing flood damage to existing properties.

The primary benefits of the NFIP are to:

1. Provide flood insurance coverage not generally available in the private market;
2. Stimulate local floodplain management to guide future development;
3. Emphasize less costly nonstructural flood control regulatory measures over structural measures; and
4. Reduce costs to the federal and state governments by shifting the burden from the general taxpayer to floodplain occupants.

Palm Beach County and all 38 municipalities participate in the National Flood Insurance Program (NFIP). In return for NFIP making flood insurance available to property owners, the county and municipalities are required to adopt ordinances to manage development within 100-year floodplains to prevent increased flooding and minimize future flood damage. Palm Beach County Flood Insurance Rate Maps published by the Federal Emergency Management Agency (FEMA) dating as far back as 1978, are used as the basis for delineating the 100-year floodplain and identifying regulated land. It is not uncommon to have adjacent areas with two different 100-year water levels due to wave run up.

The FIRM depicts the flood plain as determined by FEMA. Explanation of the various zones on the maps follows. **Appendix C** Flood Section has these zones mapped for Palm Beach County.

Explanation of Zone Designations

Zone	Explanation
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
AO	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one square mile; or areas protected by levees from the base flood.
C	Areas of minimal flooding.
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

Flood Damage Prevention Ordinances

Palm Beach County's Flood Damage Prevention Ordinance, covering the unincorporated areas of the county, can be accessed through the Palm Beach County Planning, Zoning and Building Division's website. Municipal residents should contact their respective building department officials to determine what requirements are in effect for their jurisdictions. The ordinance has been revised and rewritten using the FEMA model. At this writing, the ordinance is being prepared for presentation to and approval by the Palm Beach County Board of County Commissioners.

Floodplain Permitting
The NFIP requires participating counties and municipalities to issue permits for all development in the 100-year floodplain. Development is broadly defined by NFIP to include any man-made change to land, including grading, filling, dredging, extraction, storage, subdivision of land, as well as the construction or improvement of structures. Proposed development must not increase flooding or create a dangerous situation during flooding, especially on neighboring properties. If a structure is involved, it must be constructed to minimize damage during flooding. Permitting officials work with applicants to discourage development in the floodplain wherever possible, but when unavoidable, the effects of development must be minimized.

The permitting review process is a requirement for continued community participation in the NFIP. Violations can not only jeopardize a community's standing in the NFIP; moreover, they can impact the ability of residents to obtain flood insurance. Residents witnessing development occurring without permits are asked to protect their rights by reporting violators to the local permit office.

Map Modernization Program
Palm Beach County is an active participant in the Map Modernization Program. Since September 2000, the county and the 37 municipalities have been working with FEMA, their contract consultants, local engineering agencies, the South Florida Water Management District (SFWMD) and the county's contract consultant in the development of a complete new set of Flood Insurance Rate Maps (FIRMs). The data being provided to FEMA's contractor includes new accurate LIDAR developed elevation data obtained from the U.S. Army Corps of Engineers and from a county contract with Florida International University.

At this writing, the new elevation data is available for virtually all of the county's topography and covers all critical areas including on barrier islands, the intra-coastal areas, riverine areas, and the District's (SFWMD) flood control canal systems and their drainage basins. In addition, SFWMD completed a hydraulic and hydrology study of the canal system and the sub-basins to establish the 100 year elevations within the system. Preparation of maps by the Army Corps was slowed by Hurricane Katrina and Herbert Hoover Dike priorities.

It is now anticipated that new FIRMs for all of Palm Beach County will be available by October 2010. The coordination process established between all of the agencies listed above should permit faster coordination of future changes with FEMA, and ensure continued improvement in the currency and accuracy of the FIRMs.

CRS
Since 1968, the Federal Emergency Management Agency (FEMA) has administered the National Flood Insurance Program (NFIP) which offers federally backed insurance money to communities that agree to adopt and enforce minimum standards for flood plain management to reduce future flood damage. In 1991, the NFIP implemented the Community Rating System (CRS) for encouraging and recognizing community flood plain management activities that "exceed" these minimum NFIP standards. Today more than 900 communities across the nation participate in CRS, including Palm Beach County and most of its municipalities. Palm Beach County joined the CRS program in October of 1991.

As an incentive and reward for participation, the flood insurance rates of residents in CRS communities may be reduced by up to 45% to reflect the reduced flood risk resulting from activities that meet CRS's three goals: reducing flood losses, facilitating accurate insurance

ratings, and promoting the awareness of flood insurance.

Communities can earn points in as many as 18 different creditable activity areas grouped into four areas of emphasis: promoting public awareness, reduction of flood damage, improved mapping and regulations; and enhanced flood preparedness. Based on the number of points earned, each CRS community is ranked in one of ten classes (with Class 1 requiring the most points). In turn, a community's class rating determines the amount of flood premium reduction its residents are eligible to receive. Communities are encouraged to improve their class ratings. Property owners residing within a Special Flood Hazard Area, an area subject to the one percent chance a year, may qualify for anywhere between 5% and 45% discount. Property owners outside the Special Flood Hazard Area qualify for a standard discount of 5%. The county strongly encourages all of its communities to take part in the CRS program.

The county and its CRS participating municipalities track repetitive loss properties county-wide on an ongoing basis using information gathered annually from FEMA and state Focus reports. For analysis, LMS GIS maps and databases are updated using these inputs to reflect repetitive loss property locations relative to historical flood areas and designated Special Flood Hazard Areas.

In accordance with CRS guidelines, letters are mailed annually to repetitive loss property owners by the county and municipalities explaining NFIP program benefits, the availability of mitigation assistance funding through the Flood Mitigation Assistance program and other mitigation assistance programs. Repetitive loss properties are an ongoing discussion and planning priority for the Mitigation Strategy Development and Flood Mitigation Advisory committees of the LMS. These committees, comprised of public and private sector representatives, are encouraged to develop and promote mitigation project ideas and strategies.

Table 4. 4 identifies the communities involved in the CRS program and their status of this writing. All the communities involved in the CRS program have program activities that follow the same strategies. Palm Beach County's CRS program activities overlap and are inextricably interlinked with the activities of the unified LMS program. While the objectives of the CRS program are many, its key strategic objectives include:

1. Heightening public awareness of flood threats in the county
2. Discouraging/managing development in flood plains
3. Minimizing flood losses in the community
4. Mitigating to eliminate repetitive loss properties
5. Ensuring residents have access to the most cost affordable flood insurance possible

Some of these goals are met through the Education and Outreach Subcommittee formed during the development of the Palm Beach County Local Mitigation Strategy. This committee's purpose is to provide information to the community and involve the community in mitigation efforts. One major effort of this subcommittee has been to encourage countywide participation in the CRS program by providing technical assistance to communities wishing to enter the CRS program, and assisting those communities already participating in the CRS program to improve their CRS ratings. Most communities in Palm Beach County are already participants in the program. Those outside the special flood hazard area and not part of the CRS also meet most if not criteria of the CRS.

These objectives are met by encompassing county and municipal plans and programs including

FMA, CRS, Comprehensive Emergency Management Plans, Comprehensive Plan, Capital Improvement Plan and the Unified Local Mitigation Strategy. All have the objective to ensure the successful mitigation activities to reduce repetitive loss properties throughout the county and its municipalities.

Outreach & Education

The Local Mitigation Strategy administers and otherwise supports a range of community Outreach and Education initiatives. Detailed descriptions of these activities and initiatives are contained in the County's Comprehensive Emergency Management Plan, the Five Year Strategic Plan, documentation associated with Community Rating System recertification, Businesses Addressing Readiness & Recovery program documentation, the Emergency Management Website, etc. Outreach activities take many forms, including (but not limited to): presentations, workshops, courses, multilingual brochures, flyers, websites, media releases, plans, telephone directory postings, mailings and inserts, expos, on-site briefings, special websites and website postings, and library holdings. Many of these activities are done in cooperation with private-public partners and sponsors.

As part of its participation in the Community Rating System program, the County maintains a collaborative Outreach Project Strategy Program (OPS), which encompasses a number of major outreach activities which are updated and reported to the Insurance Services Office as part of the annual recertification process.

A representative listing of some of the more significant outreach and education activities includes:

- Annual publication of a Hurricane & Flood Survival Guide (3 languages)
- Annual Hurricane & Flood Awareness Expo(s)
- Bell South Directory Emergency Information Pages (4 Directories)
- Preparation/distribution of hazard and audience-specific brochures
- Business preparedness and post-disaster needs posting websites
- Business disaster planning guide - CD
- Flood Information website
- Emergency Information website
- LMS meetings open to the public
- Library holdings through the County Library System
- Special programs for association represented communities
- On-site presentations, structural evaluations, and planning assistance for special-interest groups such as home owner associations, property management firms, businesses, churches & synagogues, public gathering facilities, etc.
- Speakers bureau of county, municipal, not-for-profit and private business volunteers
- Participation in numerous fairs and expos hosted by public and private sector groups
- Annual hurricane call-in event sponsored by a local TV affiliate
- Course offerings (Certified and not) on safety and preparedness topics
- Participation as presenters/instructors at the National, Governor's, and South Florida hurricane conferences
- Published articles, papers

Most of the activities above are provided on an ongoing or seasonal basis. Details of most activities are documented in one or more of the following forms: In program specific reports, recertification packages, post-activity reports, monthly status reports, and in plan updates. The

County and municipal jurisdictions maintain and distribute government and not-for-profit publications as appropriate. Lists of most distributed and held government and not-for-profit publications are contained in the county's Comprehensive Emergency Management Plan and relevant Community Rating System documentation.

The County has established a "first of its kind in the U.S." CRS Users' Group which works on collaborative initiatives in all 18 CRS activity areas. ISO regularly attends the group's monthly meetings. National representatives have visited meetings as well and the first Coordinators class outside of EMI in Maryland was conducted in Palm Beach County. FEMA uses the User Group and its flood awareness website as national models at their classes at EMI.

FMA

The Flood Mitigation Assistance (FMA) Program is a National Flood Insurance Program (NFIP) initiative administered by the Florida Department of Community Affairs to help communities identify and implement measures to reduce or eliminate the long-term risk of flood damage to homes and other structures insurable under the National Flood Insurance Program.

Presently Palm Beach County offers the program on a limited basis to owners of "repetitive flood loss" properties based on the availability of federal and state funds and the availability of local resources to administer the program. The program provides homeowners with reasonable, cost-effective hazard mitigation options and potential public and private financing alternatives.

The Federal Emergency Management Agency contributes 75% of eligible mitigation costs. The remaining 25% must come from non-federal sources. The homeowner must contribute at least 12.5%. However at the present time, Palm Beach County requires the homeowner to contribute the full non-federal share.

Examples of flood mitigation projects that might qualify for FMA funding assistance include:

- Elevation of flood prone structures
- Relocation of flood prone structures
- Demolition (with or without rebuilding at higher elevation)
- Acquisition
- Various flood proofing measures.

Information and support is provided in a variety of forms to potential FMA applicants to assist them in developing projects and preparing application packages. Through the county's new LMS committee structure, the Project Support Committee is available to offer technical and administrative guidance and assistance to applicants, including assistance with benefit-cost computations.

More information on the status and activities of the NFIP and CRS is provided in Special Appendix III, Appendix J and Special Appendix II.

Table 4.4. Summary of Community Rating System (CRS) Status (August 2009)

Community Number	Community Name	CRS Rating	% Reduction in NFIP Rates
120192	Palm Beach County - Unincorporated	6	20%
120193	City of Atlantis	8	10%
000000	City of Belle Glade	NP	0%
120195	City of Boca Raton	8	10%
120196	City of Boynton Beach	8	10%
000000	Town of Briny Breezes	NP	0%
120198	Town of Cloud Lake	8	10%
125102	City of Delray Beach	9	5%
120200	Town of Glen Ridge	10	0%
000000	City of Greenacres	NP	0%
125109	Town of Gulf Stream	7	15%
120205	Town of Haverhill	NP	0%
125111	Town of Highland Beach	9	5%
120207	Town of Hypoluxo	8	10%
120208	Town of Juno Beach	5	25%
125119	Town of Jupiter	7	15%
120162	Town of Jupiter Inlet Colony	8	10%
120211	Town of Lake Clark Shores	8	10%
120212	Town of Lake Park	9	5%
120213	City of Lake Worth	9	5%
120214	City of Lantana	8	10%
	Loxahatchee Groves	Included in PB County	20%
120215	Town of Manalapan	9	5%
120216	Town of Mangonia Park	8	10%
120217	Village of North Palm Beach	7	15%
125134	Town of Ocean Ridge	7	15%
120219	City of Pahokee	NP	0%

Community Number	Community Name	CRS Rating	% Reduction in NFIP Rates
120220	Town of Palm Beach	7	15%
120221	City of Palm Beach Gardens	7	15%
125137	Town of Palm Beach Shores	9	5%
120223	Village of Palm Springs	8	10%
125142	City of Riviera Beach	NP	0%
000000	Village of Royal Palm Beach	NP	0%
000000	City of South Bay	NP	0%
120227	City of South Palm Beach	8	10%
120228	Village of Tequesta	NP	0%
125157	Village of Wellington	7	15%
120229	City of West Palm Beach	6	20%

• Based on the FEMA Florida Repetitive Loss List • NP Non-Participant in the CRS Program • UK Unknown

Elevation of New and Substantially Improved Structures
Damage to "new" and "substantially improved" floodplain structures is minimized by elevating the lowest floor of occupied areas a specified amount above the 100-year flood elevation. Substantially improved structures are those where the cost of reconstruction, rehabilitation, additions or other improvements equals or exceeds 50% of the building's market value. Substantially improved structures are subject to the same elevation standards as new structures. Check with your local permit office for specific requirements in your jurisdiction.

Elevation Certificates
To verify that a building has been properly elevated, building officials require the completion of an Elevation Certificate by a professional engineer or surveyor. After the lowest floor is in place, its elevation above sea level is determined by a survey. The Elevation Certificate is part of the permit record and must be submitted before the building may be occupied.

Further information on the requirements for floodplain development, the permitting process and Elevation Certificates can be obtained from your local permit office.

Documented Repetitive Losses
Palm Beach County adheres to FEMA's definition of repetitive loss properties, that is, properties whose owners have received payment for more than one claim within a 10-year period of their flood insurance policies as recorded by the NFIP. The total number of repetitive losses in each jurisdiction is contained in the Special Appendix. Specific information on repetitive loss properties is not published in public access documents. Palm Beach County and the incorporated areas. Also, present data on each community's CRS score indicates the percent reduction in National Flood Insurance rates each community's residents receive if they participate actively in the CRS program. **Appendix J** identifies and locates each repetitive loss property and evaluates its continued vulnerability to flooding damage.

At this writing, FEMA records accounted for 183 registered repetitive loss properties within Palm Beach County unincorporated and its jurisdictions. The number has grown steadily with the increased tropical activity and extraordinary rain events the county has experienced. A significant percentage of these repetitive loss properties lie outside the county's recognized special flood hazard areas.

The Palm Beach County Unified Local Mitigation Strategy's goal is to reduce the number of repetitive loss properties throughout the county and prevent new properties from being added to the list. The county takes great strives in trying to reduce and prevent repetitive loss properties. The county takes part in various programs to reduce and prevent repetitive losses such as FMA and CRS as demonstrated above. The LMS also has various plans incorporated into it to ensure it correlates with the other objectives throughout the county and its jurisdictions. The LMS is referenced throughout the Mitigation section of the Comprehensive Emergency Management Plan as the guiding source for mitigation activities pre and post disasters. Also, the Capital Improvement Plans reflect mitigation objectives to prevent repetitive loss properties.

Since its inception, Palm Beach County's LMS has placed a major emphasis on drainage improvement projects as a major flood mitigation strategy. Indeed, drainage improvement projects have had a predominant representation on the LMS prioritized project list. Some large-scale drainage improvement projects, perceived to be beyond the threshold for funding assistance applications, have historically been handled locally by Capital Improvement Plans

rather than through the LMS. The LMS drainage projects are often coordinated with larger self-funded community drainage improvement projects.

Drainage improvement projects; however, are often not the answer for isolated repetitive flood loss properties. Increasingly, the LMS has been moving toward a more comprehensive program of mitigation directed at repetitive loss problems.

The county's network of CRS communities provides an excellent mechanism for identifying repetitive flood loss properties and coordinating comprehensive activities to launch mitigation initiatives. The LMS program not only provides the strategic guidance necessary to coordinating flood mitigation initiatives, it also helps in translating those strategies into viable flood mitigation projects. The final component in Palm Beach County's multi-program strategy is participation in the Flood Mitigation Assistance (FMA) Program.

Mitigation Projects to Repetitive Loss Properties
The county first submitted project applications for FMA assistance in 1999. It was not until 2002 that the initial two projects were approved for FMA funding. The projects were completed in 2003. These projects provided all jurisdictions an opportunity to learn about the program and information that would be useful in planning their own programs. These two completed projects have been successful since two properties have been taken off the repetitive loss properties list.

Project #1 - Elevation Project
The first project involved a home in the unincorporated area of Palm beach County referred to as "The Acreage." The property has amassed four insurance losses since 1988 despite. The property does not reside in Special Flood Hazard Area.

The elevation involved raising a slab on grade structure with the slab intact and placing it on extended foundation walls. A series of coordinated hydraulic jacks were used to achieve the target elevation above the base flood elevation. Openings for equalization of flood forces were included per FEMA specifications.

Project #2 – Flood Wall Project
The second FMA project involved a multiple flood loss property located in a residential community in the Lake Park area. The property did not suffer from flood water build up. Instead, flood water run off from neighboring properties tended to enter the slab at grade level structure, flowing through the house before exiting to lower elevations on the opposite side of the home. The project involved a combination of mitigation measures, including construction of a deflection wall, creation of swales, and the installation of improved drainage systems. These measures permit flood water runoff to be redirected around the structure rather than through it.

These projects served two important purposes. They gave the county's CRS participating communities opportunity to observe and learn about the requirements and procedures of the FMA program and what will be required to organize and manage their local initiatives. They also provided lessons learned that will be valuable in developing a model for county jurisdictions and residents seeking FMA assistance.

4.1.4.2 Municipalities

Within Palm Beach County, there are 38 municipalities (see **Table 4.1**). There is wide variation

among the jurisdictions in terms of community character. Community character is shaped by factors such as land use mix, density, size of population, and location (e.g., on the Atlantic Ocean, adjacent to Lake Okeechobee, inland). Due to the differences, it is not unusual for local governments to have different perspectives relative to the significance various hazards have on their community. Certainly there are hazards that all jurisdictions, regardless of the community character, have concern over such as flooding, hurricanes, tornadoes. In agricultural communities like Pahokee or Belle Glade, biological pest control, freezes, and drought are more likely to be of greater concern, while in communities bordering the Atlantic Ocean (e.g., Ocean Ridge, Palm Beach, Jupiter), hazards such as beach erosion and shoreline stabilization generate considerable concern among the residents.

Table 4. 2 delineates the location, type, community character, economic base, and degree to which each of the participating municipalities within the county is "built-out" at the present time. The following defines the headings displayed in the table:

- Location

  Coastal - Municipality borders on the Atlantic Ocean
  Inland - Municipality does not border on the Atlantic Ocean or Lake Okeechobee
  Lakefront - Municipality borders on Lake Okeechobee

- Urban/Rural

  Urban - Area characterized by activities predominantly based on the manufacture, production, distribution, or provision of goods and services in a setting which typically includes residential and nonresidential development uses other than those which are characteristic of rural areas
  Rural - Areas characterized by activities which are largely based on agricultural uses or the extraction of natural resources, or areas containing large proportions of undeveloped, unimproved, or low density property

- Community Character

  Residential - Land use is primarily for housing
  Retirement - Land use is primarily for adult housing communities
  Working - Land use is primarily connected with the sale, rental, and distribution of products or performance of services

- Percent Built Out

- Economic Base

  Agricultural - Main source of income is activities within land areas which are predominantly used for the cultivation of crops and livestock

  Business - Main source of income is primarily connected with the sale, rental, and distribution of products or performance of services

  Industrial - Main source of income is activities predominantly connected with manufacturing, assembly, processing, or storage of products

Residential/Retirement - Main source of income is primarily connected with real estate.

Listing of Municipal Agencies

The organizational structure of each municipality in the county differs in terms of organizational complexity and functional responsibility. A city like West Palm Beach (population – 105,068) has an organizational structure that is considerably more complex than some of the smaller communities in the county like Atlantis, Cloud Lake or Jupiter Inlet Colony.

The following is a brief discussion of typical agencies within the municipal organizational structure having hazard mitigation functional responsibilities.

Emergency Management. Emergency management responsibilities generally fall within the purview of public safety, fire, and/or police departments. West Palm Beach is one of the few municipalities that have a staff person whose sole responsibility is emergency management. It is not unusual in many cities that emergency management is an individual's secondary responsibility. During emergency events, such as hurricanes, each local government has an "executive group" (e.g., Mayor, city manager, police chief, fire chief) which coordinates the city's efforts with the county Division of Emergency Management.

Planning. The larger jurisdictions such as West Palm Beach, Boca Raton, Jupiter, Boynton Beach, Delray Beach and Palm Beach Gardens operate planning departments with professional staffs. Some of the smaller jurisdictions have single-person staffs, while the smallest assign those duties to a lay planning and zoning board and provide staff support by a building official or comparable staff person**.** The community development departments review zoning petitions, site plans, and other development orders (e.g., variances, special exceptions), as well as administering their local comprehensive plan.

Building. Most municipalities issue their own building permits. However, for two municipal governments, the County Building Division issues their permits. They include Ocean Ridge and Gulf Stream. All operate under the Standard Building Code. Modifications are made to the various sections (e.g., building, plumbing, fire) of the Code from time to time; however, municipalities may or may not amend their local building code to reflect those changes. They do if they feel that the code modification is appropriate to their community.

Public Works & Engineering. While not all municipalities have a public works and engineering department, all generally perform this function in some manner. If it is under a contractual arrangement, there is someone in the jurisdiction responsible for overseeing the consultant. The group having responsibility for public works and engineering has the responsibility for implementing structural improvements (e.g., stormwater facility retrofit, shuttering buildings, constructing new EOCs).

Fire Departments. While many cities contract with the County Fire-Rescue Department, there are others that operate their own fire-rescue departments. In some instances, smaller jurisdictions contract with a larger municipal neighbor. For example, Boynton Beach provides fire service to Golf, and Ocean Ridge and Delray Beach provides fire service to Gulf Stream.

Municipal Mitigation Policies, Ordinances, and Plans

Policy Plans.

- Municipal Comprehensive Plans

  Like the county, each city has an adopted Comprehensive Plan. It serves as a policy instrument for each city and defines that particular city's development and redevelopment policies. All comprehensive plans are required by Section 163.3161, F.S. to contain 8 plan elements: Conservation, Infrastructure (i.e., potable water, sanitary sewer, stormwater management, solid waste, natural aquifer recharge), Future Land Use, Housing, Recreation and Open Space, Transportation, Intergovernmental Coordination, and Capital Improvement. For units of local government abutting the Atlantic Ocean, they must also prepare a Coastal Management Element. In Palm Beach County, 19 municipalities border the Atlantic Ocean coastline.

  There is considerable variation among local governments in the depth to which hazards are addressed in their comprehensive plans. Certainly the population size, geographic spatial limits, diversity in mix of land uses, and depth of understanding of hazard mitigation affects the level of detail local governments apply to the issue of hazards. Any extended discussion of hazards occurs, for the most part, in the Conservation, Coastal Management, and Infrastructure elements. A city-by-city hazard mitigation inventory, categorized by comprehensive plan element, is summarized in **Table D-2**. Specific mitigation-related policies from each municipality's Comprehensive Plan are described and cross-referenced in **Appendix D**.

- Local Emergency Management Plans

  A number of municipalities have adopted emergency management plans. Most follow the content of the county CEMP. Their focus is on emergency response versus long-term hazard mitigation.

Ordinances and Other Plans. Other types of ordinances and plans municipalities that have adopted that are relevant to hazard mitigation include:

- Incorporating the 1997 edition of Standard Building Code complete with Appendices A,B,C,D,E,F,G,H,I,J and K;
- Adding window glazing and/or shuttering requirements to their building codes;
- Becoming affiliated with the Community Rating System (CRS) program (*currently 29 out of 37 local governments are CRS qualified);*
- Emergency Water Restriction ordinances;
- Stormwater Master Plan;
- Flood Damage Prevention and Protection Ordinance

Mitigation Projects/Initiatives

A LMS Survey was prepared and distributed to all participating local governments as a means to inventory and assemble data on mitigation projects and initiatives each governmental entity had or was implementing. Projects are defined as capital facilities. Initiatives can be anything from purchase of property and relocation of homes or businesses, to upgraded building codes, to incentives, to public information campaigns, to preparedness training and drills, to professional development seminars. Thirty-six municipalities responded. Existing municipal hazard mitigation projects, and programs are summarized in **Table D-3**. There is wide variation;

while a number of municipalities have not undertaken any mitigation projects, others have been highly proactive, completing multiple projects/initiatives. The following provides a general discussion of what is being accomplished by municipal governments in Palm Beach County. Also, there are a few communities that already have well-developed hazard mitigation programs in place. A brief discussion of each is included.

Projects. Shuttering public facilities, and upgrading or correcting drainage facility deficiencies are the two most common types of hazard mitigation projects undertaken by Palm Beach County municipalities. Other types of projects reported in the local government LMS Survey are:

- Glazing exterior windows on public facilities to achieve impact resistance from windborne debris;
- Replacing and/or upgrading drainage pumps;
- Installing emergency power generators;
- Installing a radio telemetry monitoring system for public utilities;
- Sirens/loudspeaker warning system used for severe storms/lightning

Codes/Ordinance Amendments. Many municipalities incorporated the updated Standard Building Code modifications introduced in 1994. Some of the more important features include:

- Modifying building codes to require floor slab or wood joists be above the 100-year floodplain and a minimum of 18 inches above the crown of the road;
- Requiring the elevation of structures; and
- Trusses manufactured in accordance with local wind models

Other actions municipalities have taken include:

- Modifying existing Local Development Regulation (LDR) to incorporate windborne debris impact standards; and
- Amending LDR to include section titled, "Building and Property Maintenance: Hurricane Precautions.

Professional Development Training. Twenty-three municipalities reported that their staff received professional development training over the course of a year. The amount of training staffs received differed by jurisdiction. City staff receiving training in emergency management activities typically comes from the following offices: fire-rescue, police, recreation, building, community development, and utilities. Types of training have included:

- Damage assessment
- Computer-aided management of emergency operations
- Amending LDR to include section titled, “Building and Property Maintenance: Hurricane Precautions.
- Orientation to disaster assistance programs
- Radiological emergency management
- Annual state hurricane conference training sessions
- Natural hazards mitigation and recovery
- Yearly conference of National Fire Protection Association

- Yearly conference of Building Officials Association of Florida
- Training sessions with Federal Emergency Management Agency
- Building Inspector courses on topics like hurricane resistant structural design, roofing updates, wood construction, and fire resistance and egress

Preparedness Training. Fourteen local governments reported that they conduct preparedness training and drills for emergency situations. A number reported that annually, they carry out a mock hurricane disaster. Other types of preparedness training reported in the LMS Surveys included:

- Structural fire drills
- Tornado drill
- Chemical spills
- Terrorist response
- Chlorine leak drills
- Communication tests
- Generator tests

Education/Public Awareness. It is common practice among local governments to distribute informational materials to its citizens, especially as it relates to hurricanes. Among the 18 local governments reporting, the scope of their programs varied. The following are methods municipalities in Palm Beach County use to disseminate information about hazards or an impending emergency event:

- Annual correspondence mailed to the residents reminding them of the need to be prepared for a hurricane
- Hurricane Survival Guide
- A Homeowner's Guide to Hurricane Retrofit
- Classes on Emergency Response Training (C.E.R.T.)
- Discussions with residents about hurricane preparedness
- Hurricane preparation video shown on city cable station
- Brochures on variety of disaster/emergency topics, including insurance, pet care, business interests, children and disasters, lightning and tornado safety
- FAX-back system with a menu of public safety information
- Dialogic System which automatically dials and plays recorded information regarding imminent emergencies
- City newsletter

4.1.5 Intergovernmental Coordination

An essential element of the hazard mitigation process is intergovernmental coordination. Disasters know no boundaries; governments and service providers increasingly must work together to strengthen communities against the loss of life and property. Coordination is important not only horizontally at the local level between county, municipalities, non-profit organizations, and the private sector, but also vertically with key state and federal agencies. Besides the potential of the LMS initiative, there are several other coordination mechanisms that already exist. They are described briefly below.

Metropolitan Planning Organization
The Metropolitan Planning Organization of Palm Beach County, commonly known as the MPO, coordinates local, state, and federal funding for thoroughfare improvements. The policy board is comprised of 18 voting members (i.e., 5 representatives of the Board of County Commissioners, 13 representatives from the municipalities), and one non-voting member (i.e., Secretary of the Florida Department of Transportation, District IV). Two key policy documents of the MPO are the long-range transportation plan, and the five-year transportation improvement plan (TIP). The TIP identifies and schedules all future roadway improvements in the near-term.

Local Government Comprehensive Plans
One mechanism to achieve intergovernmental coordination is the local comprehensive plan. As identified in **Appendix D**, each comprehensive plan contains an intergovernmental coordination plan element.

Palm Beach County Comprehensive Emergency Plan
The county's CEMP as described in the section titled**, Mitigation Policies and Ordinances**, is very important in terms of coordination. It identifies coordination of the responsibilities and functions of agencies and organizations during disaster situations.

District X Local Emergency Planning Committee
The LEPC is an important vehicle to coordinate administering regional compliance with hazardous materials reporting and training laws. The TCRPC provides full-time staff to administer the activities of the Committee.

State Emergency Management Plan
The State of Florida CEMP establishes the framework of a coordination system to ensure that the State of Florida is prepared to respond to the occurrence of emergencies and disasters. The plan describes roles and responsibilities of state agencies, special districts, local governments, and voluntary organizations, unites the efforts of these groups for a comprehensive approach. The plan is divided into three sections.

The Basic Plan:	Outlines how the state will assist counties in response, recovery, and mitigation of disasters; details responsibility at various levels of government; describes method of operations and financial management policies; ensures continuity of government; and addresses recovery issues.
Specific Response/Recovery Actions:	Actions that are unique to a specific hazard, and are described in the Basic Plan and Response Functions sections.
Response Functional Annexes:	Present the State's strategies for disaster response by outlining Emergency Support Functions (ESF). ESF's are structured from the Federal Response Plan.

Comprehensive Plan Amendment Coordinated Review Committee
The Comprehensive Plan Amendment Coordinated Review Interlocal Agreement establishes a countywide Comprehensive Plan Coordinated Review Process. It is designed to provide coordination of proposed plan amendments, cooperation between affected local governments and service providers, and opportunities to resolve conflicts only within the Plan Amendment Process. This process includes the following actions:

- Proposed plan amendments must have sufficient distribution and dissemination to insure that initial transmittal and final approval do not occur without adequate notice to local governments and service providers who may be adversely affected by the action.

- An avenue for discussion and evaluation of the proposed plan amendments is created so that the governing body is aware of objections, the basis for them, and the reasonableness of the objection.

- An opportunity is created for conflict resolution of an item which, if approved, may result in a potential problem for another local government or service provider.

- The Comprehensive Plan Amendment Coordinated Review Process does not diminish or transfer existing authority with respect to planning and implementation decision of the participants.

The Multi-Jurisdictional Issues Coordination Forum
The forum has been established through an resolution/interlocal agreement. The primary goal of this entity is to establish a mechanism that will provide a means of communication and education between the various local governments and service providers. This is accomplished through the receipt and review of reports; through presentations of items of multi-jurisdictional impact; and through the review of actions taken by the Executive Committee. All members of this forum must be participants in the Comprehensive Plan Amendment Coordinated Review Interlocal Agreement.

EM Team
EM Team is an organization of professionals from agencies and municipalities throughout Palm Beach County who share a mutual interest in emergency management issues. The EM Team meets once a month. Meeting notices of related interest, and other information are distributed in advance of the scheduled meeting date. Members of EM Team benefit by:

- Receiving the latest information from federal, state and local levels of government concerning all issues relating to comprehensive emergency management;

- Strengthening ties and sharing information with the county, neighboring municipalities and other agencies in the area;

- Exchanging ideas and receiving information regarding training opportunities in emergency management (many of which are free or involve minimal costs);

- Meeting the managers and officials they may need to call on in times of emergency or disaster.

4.2 PRIVATE SECTOR BACKGROUND AND ANALYSIS

4.2.1 Background

Major disasters have repeatedly demonstrated that all components of the community can be significantly impacted, either directly or indirectly by the event. It is therefore important that mitigation and redevelopment planning efforts also involve the entire community. Involvement of the private sector in the LMS process was given high priority from the outset of the program by the Division of Emergency Management (DEM). Besides receiving funding from the Florida Department of Community Affairs (FDCA) to prepare a LMS, the FDCA also awarded Palm Beach County a grant pursuant to Chapter 9G-19, Florida Administrative Code, to develop a Business Community Recovery and Redevelopment Strategy Implementation. Since private sector involvement was important in both efforts, the DEM a committee for education and outreach was created. In addition, staff from the DEM and the Palm Beach County Office of Economic Development coordinated with each other on all relevant issues of mutual interest to both programs.

The following groups have participated actively in the program:

- Business Alliance
- Florida Light & Power Company
- Palm Beach Community College
- Black Business Investment, Inc.
- Home Depot
- Motorola
- Port of Palm Beach
- Delray Beach Chamber of Commerce
- Delray Beach Community Dev Agency
- Palm Beach County Information System Services Department
- Fidelity Federal of the Palm Beaches
- The Northern Palm Beach Chamber of Commerce
- Marine Industries Association of Palm Beach County, Inc
- Office Depot
- IBM
- Florida Atlantic University
- Tropical Shipping
- Florida International University
- Business Loan Funds
- The Palm Beaches
- Florida Insurance Council
- Brown Distributing
- Tourist Development Board
- Farm Bureau West
- Palm Beach County Purchasing Department
- WPBF Channel 25
- The Boynton Beach Mall
- Palm Beach County Economic Dev. Office
- Poe & Brown, Inc
- Small Business Bank
- Suntrust
- Pratt & Whitney
- Bank Atlantic
- NCCI Holding

Perhaps the greatest accomplishment, beyond the specific accomplishments outlined in this section, has been special collaborative relationships now established between the private sector and public sector entities. Cornerstone partnerships in this endeavor now exist between the Palm Beach County DEM and Economic Development Divisions, and participating municipalities on the public side and a network of participating Chambers of Commerce.

The initiatives outlined in this section are an integral part of the ongoing local disaster mitigation strategy. In the private sector, efforts are directed at minimizing private sector losses, improving business survival rates, protecting and preserving the economic base provided by businesses, and speeding the overall community recovery process.

Four key objectives were addressed:

Objective 1	*Establish improve intergovernmental and private sector coordination.*
Objective 2	*Refine the hazard and vulnerability analysis for the economic sector.*
Objective 3	*Evaluate local available resources, identify gaps and develop appropriate funding mechanisms and strategies to fill any gaps.*
Objective 4	*Create a public education program focusing on educating the business community to be prepared for disasters and able to recover quickly.*

4.2.2 Accomplishments

The following summarizes the improved accomplishments of the private sector work effort of the Outreach and Education Committee by objective:

4.2.2.1 Objective 1: Establish improved intergovernmental and private sector coordination.

Three tasks related to this objective represent the beginning points for an ongoing, long-range program to improve intergovernmental and private sector collaboration, coordination and relations.

Task 1
Prepare a comprehensive vendor list and inventories of equipment and supplies. The primary thrust of this task was to create a system whereby businesses victimized by disasters could access vendors and suppliers to procure goods and services necessary to rebuild and resume normal business operations.

Early in the project, the Economic Development Specialist met with the purchasing staff of several county and municipal agencies relative to the characteristics of their databases and their

potential suitability for business disaster applications. With the assistance of representatives from the Information Systems Services Department (ISS), the idea was conceived of housing the vendor database in the business section of the Palm Beach County Emergency Management web site.

Upon further discussion, the idea eventually evolved to the creation of a reverse vendor database, an emergency need posting system for disaster-impacted businesses. This approach avoids most of the maintenance costs and burdens that are associated with traditional vendor databases.

ISS was subsequently commissioned to develop this system, eventually dubbed the "Emergency Business Buyers' Database." Development and testing were successfully accomplished in early July; the system awaits activation if and when a local disaster occurs.

Task 2
Develop a comprehensive list of needs for emergency contracts and agreements, and secure sources for items needed by the response community which are usually not needed in day to day operations. Research determined that the Palm Beach County Purchasing Department has in place item lists, source lists, and systems and procedures necessary for fully meeting the needs of the County's response community and to satisfy the assistance requirements spelled out by the mutual aid agreement with Orange County. Efforts to publicize the existence of this list to the local community are being made through the Chambers of Commerce to facilitate local involvement, when possible.

Task 3
Establish Business Hotlines, Business Aid and Redevelopment Assistance Centers. An important element in the support of private sector preparedness and timely recovery is the ability of businesses to stay abreast of critical information. An objective in this project was to provide the business community with a single-point contact for accessing important business-related information to assist pre-disaster preparations and post-disaster recovery activities. As part of its partnership agreements with various Chambers of Commerce throughout the county, Palm Beach County Emergency Management is encouraging chambers to dedicate one or more telephone lines to serve as an emergency "hot line" service for community businesses.

At the time of this writing, discussions were underway with the Delray Beach Chamber of Commerce to decide remaining operational, administrative and technical details of the system. Thereafter, an emergency “hot line,” staffed at the Chamber by its members, will attempt to coordinate and respond to pre and post disaster business concerns and needs.

4.2.2.2 Objective 2: Refine hazard and vulnerability analysis for the economic sector

The Steering Committee definition of critical facilities includes several economic sector facilities, notably nursing and convalescent centers, and public communication facilities in what are designated as primary critical facilities, and financial institutions, pharmacies, reconstruction material suppliers, medical clinics, and food distribution centers in what are designated as secondary critical facilities. Private sector primary critical facilities are included in the ArcView database, and, when the Property Appraiser’s office completes the automated inventory conversion of commercial and industrial properties into an ArcView database, secondary critical facility information will be merged with the database file.

The vulnerability of the business community to potential disasters was analyzed. Mapping and tabular products were developed that may be used by commercial/industrial property owners for performing self-analysis of hazard vulnerabilities. These products also provide a better understanding of the various hazards that could potentially impact segments of business community.

An Economic Disaster Management Information System (EDMIS) was developed and designed. Unfortunately, this product cannot be used until database conversion is completed by the Property Appraiser's Office. Once on-line, however, EDMIS will be used to more fully explore mitigation opportunities in the private sector.

4.2.2.3 Objective 3: Evaluate local available resources, identify gaps, and develop appropriate funding mechanisms and strategies to fill the gaps.

Exploratory initiatives were explored relating to ensuring post-disaster cash flow, creating emergency loan programs and community credit programs, expediting the processing of post-disaster loans, and establishing a "bridge loan" capability. The policies and programs of area banks were reviewed, various loan funds examined, and state and federal agency programs, including "Operation Open for Business," were reviewed. Among the most glaring "gaps" uncovered that could impact Palm Beach County businesses were the following:

- Meeting the managers and officials they may need to call on in times of emergency or disaster.
- Insurance typically does not cover all business losses.
- Banks will not necessarily loan money to victimized businesses and may not relax their requirements for financial documentation and credit status in emergency periods.
- Business interruption insurance is seldom purchased by businesses because it is so costly.
- Low interest loans for mitigation projects are not yet available in Palm Beach County.

The challenge of dealing with these issues, however, is indeed complex. The decision authority for creating policies and programs dealing with these issues invariably resides at levels outside Palm Beach County. Creation of emergency business assistance programs will likely require legislative initiatives and corporate lobbying beyond the influence of even regional interests. Even so, the need for creative funding mechanisms and strategies was a consistent theme throughout the project and was a common speaking point at private sector and public sector forums.

The project team of a year 1999-2000 grant funded to Palm Beach County, entitled *Businesses Addressing Readiness & Recovery* (BARR), will continue efforts to mobilize sufficient support to positively influence private sector and public sector decision makers to institute meaningful emergency assistance programs for businesses. It will support other related initiatives underway at the state level. The BARR program will also pattern many of programs and initiatives after those of *Project Impact* and the City of Deerfield Beach's *Operation Open for Business*.

4.2.2.4 Objective 4: Create a public education program focusing on educating the business community to be prepared for a disaster and able to recover quickly.

Two tasks of this objective address a program to enable the business community to educate and prepare itself, reaching the greatest number of businesses in the shortest time possible.

Task 1
Train Chamber of Commerce staff and the business community. During the course of the project, staff members attended, participated in, and led a variety of business-related forums on disaster issues, including disaster conferences, workshops, professional association meetings, expos and trade shows, and community planning sessions. They also worked closely with private and public sector experts on a number of significant community initiatives and reviewed extensive literature from FEMA, state, federal and non-government organization sources.

Among the many methods employed to reach and educate the business community throughout Palm Beach County were:

- Insurance typically does not cover all business losses.
- Distribution of specially designed BARR pamphlets and business cards
- "Of Interest To Business" location on the County's Emergency Management web site
- Booths in expos, fairs, trade shows
- Presentations to business, professional and public sector groups
- Media interviews and articles
- Presentations at the 1999 National Hurricane Conference
- Participation in other initiatives (e.g. Project Impact and Operation Open For Business)

One-on-one contingency planning assistance for larger businesses. In this task, members of several Chambers of Commerce and mentors from large- and medium-sized businesses have been trained to train others and make presentations raising the business community's awareness of preparedness issues and options. These efforts will continue.

Task 2
Develop a written business contingency planning guide. It was reasoned that preparation and distribution of a business contingency planning workbook and a business contingency plan template would be practical and productive contributions to building a more disaster resistant business community. The workbook that has been developed serves as the primary text for Emergency Management's ongoing series of contingency planning workshops. Following the template, small- to middle-sized businesses are able to easily prepare contingency plans tailored to their specific needs.

A copy of the contingency planning workbook and promotional materials produced in conjunction with hosting Chambers of Commerce is available from the DEM. At the time of this writing, approximately 125 businesses have attended workshops and prepared plans.

Conducting workshops will continue to be a priority, as will be the training of industry trainers and the development of mentors to continue planning initiatives after the grant period concludes.

4.3 STRENGTHENING THE ROLE OF LOCAL GOVERNMENTS

As has been described in the text, local governments in Palm Beach County have taken steps to strengthen themselves both in terms of capital facility improvements and ordinances, regulations, and programs. Becoming more disaster-resistant is not limited to just hardening of structures. There are a number of activities that the County and municipalities can undertake to strengthen the role of local governments to lessen the impacts resulting from emergency events which do not require expending money on capital projects. Plans can be modified, laws and regulations can be amended, informational materials published and distributed, and professional training augmented. Ideas were generated from a variety of sources: interviews with local jurisdictions, and information generated from LMS Survey forms, the LMS Steering Committee and subcommittees, and discussions with local governments. The suggestions for countywide projects resulting from the various discussions with local government include:

1. Projects on the LMS PPL should be incorporated in local government comprehensive plans, capital improvement elements (CIE), at the time the CIE's are reviewed on an annual basis in accordance with Section 163.3177 (3) (a), Florida Statutes (F.S.).

2. As permitted under Section 163.3177 (7) (h) & (l), F.S., local governments could incorporate optional comprehensive plan element for public safety, or a hazard mitigation/post-disaster redevelopment plan;

3. Integrate the LMS into the Palm Beach County CEMP as appropriate and within the state specified guidelines.

4. Assess existing CRS programs to determine ways to strengthen and improve the local jurisdiction's CRS rating and support non-CRS communities to join the program.

5. Recommend that public building construction, whether it be new construction or renovation of older public structures, incorporate hazard mitigation building practices, whenever financially feasible;

6. Recommend to the appropriate authorities, the incorporation of safe room requirements in the local building code.

7. Update existing Palm Beach County post-disaster redevelopment plans, and prepare a model plan as a guide for local jurisdictions.

8. Support BARR in the continuing effort of coordination and mutual support between the county, local, and business community, before, during and after a disaster event.

9. The LMS Steering Committee should work with the partner communities and the county to continue ongoing funding and staffing for the continuation of LMS.

10. Recommend emergency building permit procedures to local authorities and jurisdictions.

11. Seek avenues to provide technical assistance in grant writing and engineering for local jurisdictions in the support of LMS projects.

12. Develop a model CEMP mitigation element as a guide for local jurisdictions in mitigation plan development.

13. Seek opportunities and potential funding sources to bury electrical wires, especially in multi-jurisdictional projects.

14. In order to increase shelter capacity countywide, support the retrofitting of all appropriate structures suitable for use as shelters.

15. Develop and disseminate multi-media outreach program countywide which will support the goals of LMS.

Post Disaster Redevelopment Plan (PDRP)

In 2006 Palm Beach County published the nation's first Post Disaster Redevelopment Plan designed to guide decisions and actions dealing with long-term recovery, reconstruction and economic redevelopment following catastrophic disaster events. Development of the plan involved county, municipal, state and federal government agencies and representatives, private sector and NGO organizations, healthcare and education representatives, and a panel of national experts on catastrophic disaster recovery, urban planning, economic development, and post disaster housing. Funding came from a federal grant, a foundation, and eight corporate sponsors. Challenging topics addressed by the plan include, but are not limited to rebuilding smart vs. rebuilding quickly, sustaining public services in the face of economic collapse, repopulation in the face of housing shortages, business survival and retention, and quality of life issues. Several civic groups including 46 members of Leadership Palm Beach County were instrumental in organizing workshops. The PDRP has been acknowledged by the U.S. Chamber of Commerce as an effective public-private partnership and by the U.S. Government Accountability Office in a Congressional Report. The plan served as a strawman model for a subsequent state-wide PDRP initiative.

SECTION 5: PROJECT PRIORITIZATION METHODOLOGY

This appendix satisfies, in part, the following FEMA requirements:

Requirement: §201.6(c)(3)(iii): [The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Requirement §201.6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Requirement: §201.6(c)(3)(ii): [The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

5.1 DEVELOPMENT AND RATIONALE

The project prioritization methodology is the means by which the LMS Steering Committee or some designated subset of that Committee will develop the single prioritized list of mitigation projects, which is one of the ultimate goals of the LMS effort. The only projects eligible for FEMA approval have to be submitted by a local government who participated in the planning process. These local governments must follow and continue to follow Palm Beach County's Local Mitigation Strategy's participation rules in **Section 1**.

Palm Beach County established a scoring procedure when the plan was first written in 1999. The scoring procedure is detailed below along with examples in **Appendix K**. This procedure remains in place thus the county has a structured scoring process for projects seeking alternative funding sources other than federal programs. However, there could be changes made due to new Federal regulations.

The LMS has been proactive in getting its participants the ability to perform a Benefit Cost Analysis to keep Palm Beach County eligible to compete for federal monies nationwide. Projects being submitted for federal funding require a Benefit Cost Analysis to be completed along with an application for submission. The objective is to create an adequate strategy for Palm Beach County to prioritize projects for possible funding other than federal funds, which are going to be prioritized based on strictly on Benefit Cost Analysis, Environmentally sound and Technically feasible. A column has been added to the Project Prioritized List (PPL) to include whether or not the project has a Benefit Cost Analysis completed. Moreover, Palm Beach County encourages all projects with the potential of a Benefit Cost Analysis greater than 1 to be completed. The PPL can be referenced in **Appendix E**. In addition, **Appendix F** is a list of potential funding sources for mitigation projects. There was a column added to the PPL to

illustrate each individual project's potential funding source referenced to a narrative detailing these funding sources. There was also a column added to express time frame of potential funding for each individual project.

To be effective and gain the support of all the communities involved, the criteria used to rank and prioritize proposed mitigation projects must accomplish the following objectives:

1) They must be fair and objective. Mitigation projects proposed by small communities must have equal opportunity to achieve as high, or a higher priority than mitigation projects proposed by larger communities or the County. Likewise, mitigation projects proposed by poor communities must have the opportunity to achieve as high or higher a priority than those projects proposed by richer communities. In short, the project evaluation criteria must ensure that each proposed mitigation project is evaluated and ranked based on individual merit;

2) They must be flexible enough to effectively rank projects mitigating for a variety of hazards. The LMS is an "all hazards" program. The criteria used to rank potential mitigation projects must be capable of ranking individual mitigation projects with diverse goals such as flood mitigation, wildfire protection, or hazardous waste spill prevention;

3) They must be functional and tied to real-world considerations such as competitive grant funding requirements. Palm Beach County will be developing a list of prioritized mitigation projects that will have to compete with a prioritized list of similar type projects from other counties in the state. It does no good to develop a list which ranks non-competitive, non-fundable projects as high priority mitigation projects;

4) They must be simple, easily understood, and relatively easy to apply. Many, perhaps hundreds, of potential mitigation projects will have to be prioritized by the Steering Committee or some subset thereof. This means that individual committee members will be scoring many projects. These individuals must be able to work through the project scoring process relatively rapidly for each project they evaluate; and

5) They must be individually well defined and specific. Each individual scoring criteria category must be well defined with the possible points to be awarded broken down in as much detail as possible to eliminate arbitrary variation in how various individuals might score the same category. Examples and guidelines need to be provided to those doing the actual scoring.

The prioritization process will be an ongoing process as the LMS is continually refined and updated. New individuals will be called upon to apply these scoring criteria in the years ahead. The criteria must be such that the new people can step in and apply them in a consistent manor with a minimal learning curve.

Much work has been done in the form of testing, revising, and fine tuning the Project Prioritization Criteria proposed in draft form with the 31 October deliverable. The fourteen originally proposed scoring criteria have been divided up based of three overarching mitigation requirements.

These overarching requirements are as follows:

1) Community Benefit The single most important consideration for any mitigation project is "What benefit does the community derive from this effort?" How, and to what extent does this mitigation project benefit the citizens of a community?

2) Community Commitment. What is the community's level of commitment that is proposing this mitigation project? All mitigation projects have to compete for funding. If the community or governmental entity proposing a given project is not willing to commit substantial time and effort to it, this project has less chance of ever being accomplished even if it is a very worthy project. There is no point in ranking a project highly that may never be accomplished even if funds are made available.

3) Project Implementation. Is this project technically, financially, and legally feasible? Basically this overarching requirement addresses the ease with which a project can be implemented. How easily can required permits be obtained? What is the time frame for accomplishing this project's goals? Are there any technical problems that must be overcome to implement this project? There is no point in ranking as "high priority" mitigation projects that have such severe legal, technical, or environmental drawbacks that years of study and/or litigation might be required before they could be implemented.

The rationale for each scoring criterion on the **Project/Initiative Evaluation Score Sheet**, its connections to known funding sources, and directions on specific numbers of points to award are discussed below.

5.1.1 Community Benefit

5.1.1.1 Community Rating System (CRS) Credit - Does the proposed project or initiative facilitate the objective of, or provide points toward improving the community's CRS Classification?

The CRS rating system determines the discounts community residents receive on flood insurance premiums. Flooding from rain events, tropical storms and hurricanes, and storm surges is one of the most significant hazards faced by residents along the Gold Coast. Activities that reduce the community vulnerability to flooding and at the same time provide points toward improving the community CRS rating have an obvious benefit to the community. In addition, FEMA makes available certain monies specifically for flood mitigation projects. Award of these grants is closely tied to a community's participation in the CRS program and efforts made to improve their rating. At present, all communities must have an adopted floodplain management plan to be eligible for these FEMA flood mitigation grants. The LMS has been accepted as partial fulfillment of the floodplain management plan requirement, thus making several more communities within the county eligible for these funds. Eventual inclusion of a more comprehensive county-wide floodplain management plan in the LMS is planned.

CRS points are awarded after a project is completed and reviewed by the CRS coordinator, but we must obviously score this category before that project actually happens. To account for this, points within our evaluation are awarded based on those activities that have the highest

potential point awards from the CRS program. In this case, the breakdown is as follows:

CRS Activity Category	Points Awarded
Flood Damage Reduction	10
Mapping and Regulatory	8
Flood Preparedness	6
Public Information	4

5.1.1.2 Project Benefit - Does the project address critical elements of the community infrastructure?

The critical question addressed here is, does this proposed project help protect the community by hardening some critical element in the community's infrastructure that will reduce the potential loss of life or property damage sustained by the community if a disaster strikes? Specific programs offering state and federal grant money are available for mitigation projects to make community infrastructure or property critical to public safety more disaster resistant.

Points under this criterion are awarded based on the nature of the facility or infrastructure element being hardened or protected. If the proposed projects mitigate a problem in a primary critical facility such as a hospital, EOC, or emergency shelter it would receive 10 points under this criterion. Primary critical facilities are defined as "Facilities critical to the immediate support of life and public safety." These are the facilities the community cannot afford to have any loss of function, even for a short period of time.

Flooding produces a widespread direct and indirect danger to large segments of the community, while at the same time damaging or potentially damaging such critical infrastructure elements as roads and storm water drainage systems. Therefore, a project reducing or preventing storm water accumulation and flooding during storm events would receive 8 points under this criterion.

Secondary critical facilities are defined as, "Facilities that will be critical for community recovery and restoration of services." Projects that help protect these types of facilities will be awarded 6 points.

Public convenience facilities are quality of life facilities such as parks, recreation areas, and non-essential public buildings. Projects protecting these types of public property will be awarded 4 points under this criterion.

5.1.1.3 Community Exposure - Does the project mitigate a frequently occurring problem or a problem to which a community is particularly vulnerable?

This criterion attempts to balance the actual risk of a specific disaster occurring versus the community's exposure in terms of life and property damage if the disaster does occur. For example, a nuclear power plant meltdown would be catastrophic if it occurred, but the frequencies with which meltdowns occur is unknown in the U.S. and optimistically extremely low. Therefore, a project proposing to mitigate for possible nuclear power plant meltdown by

providing lead lined emergency shelters would score lower than a project which mitigates for a more frequent, but less catastrophic type of disaster, such as the flooding of a library.

Data for this evaluation will come from the Hazard Vulnerability Analysis (HVA) portion of the LMS project, and will be community specific. For example, all communities along the Gold Coast experience thunderstorms, lightning, and frequent localized short term flooding, but in most, the exposure in terms of life and property damage is relatively low. Some specific communities, however, such as mobile home parks, or areas with know drainage problems, have much higher exposures to ill effects from thunderstorm hazards. The entire Gold Coast has a high exposure to damage from tropical storms and hurricanes. Category 1 and 2 hurricanes occur with a relatively high frequency, while category 3, 4, and 5 hurricanes are less frequent. All of these factors must be evaluated in weighing the merits of one mitigation project against another.

Specific guidelines for assigning points under this evaluation criterion are as follows:

Community Exposure # of People or $ Value of Property	Frequency or Risk of Occurrence	Points Awarded
High	High	10 Points
Moderate	High	8 Points
Low	High	6 Points
High	Moderate	9 Points
Moderate	Moderate	7 Points
Low	Moderate	4 Points
High	Low	5 Points
Moderate	Low	2 Points
Low	Low	1 Points

5.1.1.4 Cost Effectiveness - What is the benefit/cost ratio of the project applying the following Benefit/Cost ratio formula:

(Loss Exposure ($) Before Project - Loss Exposure ($) After Project) ÷ Cost of the Project

“A key criterion for mitigation projects to be eligible for funding is that they be cost effective.” This is a direct quote from the FEMA 1996 guidelines for determining the cost-effectiveness of mitigation projects. “Mitigation efforts can be justified only to the extent to which the averted losses in terms of life and property exceeds the cost of a given mitigation project or effort.” In other words, if a mitigation project costs more than what it is designed to protect, why do it?

While a positive Benefit/Cost Ratio is an absolute requirement for FEMA funding, it should be a primary consideration in evaluating any mitigation idea. For this reason, it is the single most highly valued component of the project prioritization criteria.

For any mitigation project to receive FEMA money, the mitigation project application will have to include a detailed Benefit/Cost analysis. Depending on the complexity of the proposed project and the amount of funding required, this Benefit/Cost analysis may require engineering drawings and/or evaluation of alternatives. Such a detailed analysis is beyond the scope of the LMS and in most cases beyond FEMA requirements. In 1996, FEMA published a new guideline for mitigation project evaluation titled "How to Determine Cost-Effectiveness of Hazard Mitigation Projects - A New Process for Expediting Application Reviews". The above formula is derived from that publication. It was developed to allow administrators to rapidly screen potential mitigation projects in a three step process:

1) Screen the project by reviewing the application data;

2) Conduct a quick Benefit/Cost analysis; and

   (a) If the quick analysis yields a Benefit/Cost Ratio greater than one, continue processing the application; or

   (b) If the Benefit/Cost analysis is less than one, request additional information from the proposer

An example application of the Benefit/Cost formula is as follows:

A community has an estimated $90,000 worth of books that may be lost due to storm surge. To shutter the Library will cost $20,000 and will prevent loss from surges associated with category 1 to 3 hurricanes. Category 1 to 3 storms represent 70% of the hurricanes likely to strike this community so the risk of loss is assumed to be reduced by 70%, leaving a remaining exposure of 30% or $27,000.

Applying the formula:

($ 90,000 - $ 27,000) ÷ $ 20,000 = 3.15

This project has a Benefit/Cost ratio of 3.15.

The community is also considering raising the floor of this library building by 2 ft at a cost of $75,000. Such a project would protect the books from storm surge under all but category 5 hurricane conditions, or approximately 85 % of the time. The residual exposure associated with this plan would be 15 % or $ 13,500.

Applying the formula:

($ 90,000 - $ 13,500) ÷ $ 75,000 = 1.02

The benefit/cost ratio on this plan is only 1.02. While this is still a positive ratio, the better return on dollars invested is achieved under the first alternative, shuttering the Library.

The higher the Benefit/Cost ratio, the better return per dollar invested is achieved. Under the first example the community is receiving $3.15 return in terms of lost prevention for every dollar invested. Under the second example the community is receiving only $ 1.02 return in terms of loss reduction for every dollar invested.

Points under this criterion will be awarded as follows:

Benefit/Cost Ratio	Points
4.0 or greater	20 Points
3.0 to 3.9	16 Points
2.0 to 2.9	12 Points
1.0 to 1.9	8 Points
<1.0	0 Points

5.1.2 Community Commitment

5.1.2.1 Contained Within the Existing Comprehensive Growth Management Plan (CGMP) - Is the project or initiative consistent with or incorporated in the existing Comprehensive Growth Management Plan?

Projects which are already contained within the approved Capital Improvements or other sections of an existing Comprehensive Growth Management Plan have already been designated as both needed and wanted within a community and are already approved by the community's elected representatives. They have the force of law behind them. Ten points will be awarded to projects falling into this category.

Points will be awarded under this criterion in the following manner:

Contained within a specific "Policy"	10 Points
Contained in "Goal" with proposed "Policy" amendment	8 Points
Contained within a broad "Goal"	5 Points
Contained in a proposed amendment	3 Points
Not in conflict with the CGMP	1 Point

5.1.2.2 Contained Within an Existing Emergency Management Plan or Other Functional Plan Developed by an Official Local Governmental Entity - Has this project or initiative already been proposed as a management initiative or structural improvement in any emergency or growth management plan proposed or adopted by County or local jurisdictions?

This applies to both officially adopted plans and to those plans or amendments to plans which have been proposed but not yet officially adopted. One of the objectives of the LMS is to encourage local governments to officially adopt mitigation measures into their Comprehensive and Emergency Management Plans. If a community wants to improved the score of a proposed mitigation project or initiative it can propose and amendment to its CGMP or CEMP containing the measure. Points will be awarded under this criterion in the following manner:

Officially adopted	10 Points
Proposed/Not officially adopted	6 Points
Not in conflict with any plan	2 Points

5.1.2.3 Public Support - Is there demonstrated public support for this project or recognition of this problem?

The question of how "public support" should be demonstrated has caused much discussion. It has been decided that points under this criterion should be awarded as follows:

Has this project or problem been the subject of:
a) An Advertised Public Meeting = 3; and
b) Written evidence of public support = 2.

Has the project or problem been the subject of both:
a) an advertised public meeting, and
b) written evidence of public concern or support.

If so award 5 points.

5.1.3 Project Implementation

5.1.3.1 Consistency with Existing Regulatory Framework - Is the project consistent with existing legal and regulatory and environmental/cultural framework?

Does the proposed project require any changes or waivers in existing building, zoning, or environmental statutes or ordinances? If changes or waivers are required, there will be an extra step in implementing such a project and the timeline to accomplish the project must be extended accordingly. Projects which are consistent with the existing legal and regulatory framework will receive 5 points. Projects which are in conflict with some aspect of the existing regulatory framework will receive lower point scores depending upon the seriousness and numbers of regulatory barriers to be overcome in implementing the proposed project.

Points will be awarded under this criterion as follows:

No regulatory issues	5 Points
Local issues	4 Points
Regional issues	3 Points
State issues	2 Points
Federal issues	1 Point

5.1.3.2 Funding Availability - Is there a funding source currently available for this particular project?

Ten points will be awarded to any project for which funding is currently available. If funding is anticipated but currently not available, points will be awarded as follows:

Funds available now	10 Points
Available in 1 year	8 Points
Available in 2 years	6 Points
Available in 3 years	4 Points
Available in 4 years	2 Points
Available in 5 years+	1 Point

5.1.3.3 Matching Funds - Are matching funds or in-kind services available for this project?

This criterion has been added because many, if not most, funding sources require local sponsors to put up some form of match either in terms of funds or services.

Points will be awarded under this criterion as follows:

Match of 50% or more	5 Points
40 to 49%	4 Points
30 to 39 %	3 Points
20 to 29 %	2 Points
1 to 20 %	1 Point

5.1.3.4 Timeframe for Accomplishing Objectives - How long will it take for the proposed mitigation project to accomplish its stated goals?

Projects which can be accomplished quickly have an inherent advantage over long-term projects, although long-term projects may ultimately be more beneficial to the community. The following weighted scale assigns points to proposed projects based on the length of time that will be required before a community begins to receive benefits from the project.

1 Year	5 Points
2 Years	4 Points
3 Years	3 Points
4 Years	2 Points
5 Years +	1 Point

In order for the individuals scoring mitigation projects to perform their jobs adequately and in a meaningful time frame it is critical that those proposing a mitigation project or projects provide as much of the critical information required for scoring as possible when they submit their projects. To help with this the attached **Mitigation Project Proposal Form** has been developed. **Appendix G** contains four examples showing how this scoring process is applied in ranking proposed mitigation projects.

5.2 TIE-BREAK PROCEDURE

In the case of tie scores, three questions may be applied.

- Ties decided by #1 will be so ranked: remaining ties not broken with question #1 will have question #2 applied.
- Ties decided by question #2 will be so ranked; remaining ties not broken will have question #3 applied.
- Ties decided by question #3 will be so ranked; remaining ties not broken with question #3 will be ranked in the order of the magnitude of effect on the community - these projects will be ranked in accordance with the number of people that will be helped by the project, largest first.

  Question #1: Which project has the highest Community Benefit score?

  Question #2: Which project has the highest Community Commitment score?

  Question #3: Which project mitigates for the most frequently occurring hazard?

5.3 LMS EVALUATION PANEL

The Evaluation Panel is responsible for reviewing and scoring proposed projects submitted to the LMS as a basis for prioritization. A minimum of 5 people serve on the Panel at any given time. Panelists are solicited by the LMS Coordinator on behalf of the Steering Committee based on LMS member recommendations and are subject to approval by the Steering Committee. Volunteers are also eligible for consideration.

Candidates must possess a technical and administrative understanding of the LMS program and its goals and objectives. In addition, candidates are expected to exercise objectivity and independent judgment in their evaluations and scoring.

5.3.1 Eligibility for Federal Funding

In order to be deemed eligible for federal monies projects must:

- Produce a Benefit Cost Analysis ratio greater than 1, and
- Meet additional program requirements, including being judged to be “environmentally sound” and “technically feasible.”

Federal funding may require additional applications or supporting documents which will be requested based upon each individual federal program.

The LMS Coordinator and County Division of Emergency Management serves as staff for the Evaluation Panel.

5.4 PROJECT PRIORITIZATION UPDATING PROCESS

STEP 1 Each year in January and July, the existing unified, countywide Project Prioritization List (PPL) will be updated. The approved PPL will be in effect until a new PPL has been adopted by the Palm Beach County LMS Steering Committee.

The Palm Beach County DEM staff will activate the update process by distributing "Project or Initiative" Proposal Forms to local governments, as well as to non-profits and other entities seeking funding for hazard mitigation-type projects, and by notifying all Evaluation Panel members that the PPL ranking process is being initiated. All applicants will have to submit their proposed projects/initiatives by the submission date in order to have their proposed projects considered for inclusion in the updated PPL. In addition, at the time an applicant submits their proposed projects, they must also identify which of their projects are already on the existing, adopted PPL and have been completed or in for the funding process.

All proposals will be submitted to the DEM office, on the "Project or Initiative" Proposal Form by the submission date identified in the letter of solicitation. For a project/initiative to be considered, Proposal Forms must be filled out completely. The contact person and fax number listed on the Proposal Form will serve as the official point-of-contact for the applicant.

STEP 2 Once the proposals have been received, DEM staff will review each proposal for completeness. DEM staff will notify, in writing via fax, those applicants who's Proposal Form(s) have not been completed fully. The applicant will be notified that they have one week from the date of receipt of the notification fax to submit additional information. If supplemental information is inadequate or no new information is submitted, the proposer will be notified in writing that their project will not be eligible for inclusion on the PPL this cycle.

STEP 3 DEM staff will schedule a meeting of the Evaluation Panel. DEM staff will compile copies of the proposals (includes supporting materials), and transmit copies to the Evaluation Panel members no later than four weeks prior to the scheduled Evaluation Panel meeting.

STEP 4 Each Evaluation Panel member will score only that portion of the "Project or Initiative" Proposal Form for which their Panel subgroup has responsibility, such as Community Benefit, Community Commitment, or Project Implementation. Each member will fax and/or mail copies of their scored "Project or Initiative" Proposal Forms to DEM staff, no more than 14 days after they received the forms. For the scoring to be valid, three of five members of each subgroup will have to score their particular section of the "Project or Initiative" Proposal Form.

STEP 5 DEM staff will average the attribute scores for each project received from each subgroup Evaluation Panel member. DEM staff will create a summary sheet that documents the results of the scoring. A "new" *Draft* PPL will be generated based on the scores received from the Evaluation Panel.

STEP 6 DEM staff will provide each applicant the "new" *Draft* PPL prior to the LMS Evaluation Panel meeting, and invite applicants to attend and provide comment. To ensure that there will be adequate space for the Evaluation Panel meeting, and to gain an understanding of how long the meeting might last, applicants will be asked to notify DEM staff seven (7) calendar days prior to the meeting if they intend on objecting to the "draft" ranking.

STEP 7 The Evaluation Panel will hold a meeting to review the scoring and finalize the *Draft* PPL. (To conduct an official meeting, a quorum of the Evaluation Panel must be present. Nine (9) members of the fifteen [15] member Evaluation Panel will constitute a quorum.) During the meeting, Panel members will discuss possible inaccuracies and/or reliability of information used by proposers, such as obsolete cost data, questions regarding project feasibility, and project tie-breakers (see Project Tie-Break Procedure). Before the meeting concludes, the Panel will vote approval of the "new" *Draft* PPL as submitted by the Evaluation Panel or as modified. DEM staff will transmit a copy of the approved "new" *Draft* PPL to the Steering Committee for approval.

As its last act of the meeting, the Panel will select a Chair for the coming cycle.

STEP 8 The DEM staff will schedule a meeting of the Steering Committee. One week in advance of the scheduled meeting, the "new" *Draft* PPL will be distributed to the

Steering Committee membership along with a listing of applicants planning to attend to object to the “draft” ranking.

STEP 9 At the scheduled Steering Committee meeting, the *Draft* PPL will be presented. (For only the purpose of adopting the PPL, eleven (11) members of the Steering Committee must be present to constitute a quorum).

Project applications received after the submission deadline, but before the next project prioritization updating process, may be accepted by the Steering Committee as UNRANKED projects. Prior to the PPL adoption vote, such projects will be presented for consideration. The Steering Committee may vote to include any or all of these projects on the draft PPL as “unranked.” Unranked projects will be listed on the PPL under the sub-heading of Unranked Projects which will appear immediately following the list of ranked projects. Unranked projects will automatically be ranked in the next ranking cycle.

Following discussion of the *Draft* PPL, the Steering Committee will adopt it as submitted or with modifications. Specific justification is required for any modification to the ranking of the projects as submitted by the Evaluation Panel, excepting inclusion of unranked projects.

STEP 10 DEM staff will distribute copies of the new revised PPL to all appropriate entities.

SECTION 6: CONFLICT RESOLUTION PROCEDURES

6.1 BACKGROUND

With multiple local governments involved in the development of the Palm Beach County LMS, differences of opinions may arise over the course of the program with regard to goals, objectives, policies and projects. Governments often have differing interests, priorities and needs, as well as distinct constituents. In cases where an impasse occurs, a procedure is needed that can be activated to resolve such conflicts. This section describes the procedure that will be used to resolve conflicts arising among the participating governmental entities in the development and implementation of the Palm Beach County LMS. The Conflict Resolution Process is depicted in the LMS Conflict Resolution Flowchart, **Figure 6.1**. The specific steps are described in detail in **Section 6.2.** The methodology is designed to be simple, user-friendly, and time efficient.

Prior to developing the process, other dispute resolution processes were investigated. They included the Treasure Coast Regional Planning Council Dispute Resolution Process, the Indian River County Multi-Jurisdictional Issues Coordination Forum, the South Florida Growth Management Conflict Resolution Consortium, the Volusia County Coastal Management Element Conflict Resolution Program, and the Monroe County procedures adopted for resolving disputes during the planning, design, construction, and operation of wastewater collection/treatment and effluent disposal facilities.

This initial project, the development of a unified LMS, will be completed in October 1999. One of the long-term LMS goals is to address conflict resolution within the LMS process. This procedure accomplishes that purpose: all LMS conflicts will follow this resolution procedure.

The two types of conflicts that may arise are issues and disputes. Issues are technical problems that are susceptible to informal solution by DEM staff. Disputes are problems that require formal resolution by neutral third parties. In either case, resolution and settlement are best settled through mutually agreed-upon understanding between the disputing parties. When that is not possible, some form of binding resolution is needed.

Developing an LMS is a cooperative, collaborative process, and local governments will likely be able to reach consensus on most issues and problems that arise during both the development and implementation periods. When occasions arise where local governments cannot reach agreement on a particular issue or project, one or more of the disputing parties may petition a hearing of the issues before the Conflict Resolution Subcommittee.

The Subcommittee will be comprised of three people: one member of the Subcommittee will be appointed by the Steering Committee Chair, a second person by an individual representing the Treasure Coast Regional Planning Council, and a third member will be someone drawn from the Steering Committee who has been selected by mutual agreement of the Steering Committee Chair and the Treasure Coast Regional Planning Council representative. Once the Subcommittee has been selected, DEM, as lead agency will prepare a memorandum delineating the dispute, include supporting documentation when available, and schedule the Subcommittee meeting.

If no resolution could be reached, the issue would then be heard by the entire Steering

Committee. The vote of the Steering Committee would be binding. The Palm Beach County DEM staff would provide staff support.

6.2 CONFLICT RESOLUTION PROCEDURE

The following provides a detailed, step-by-step procedure that would be followed should a dispute arise under the LMS.

Objective: To institute a fair, effective, and efficient process to resolve conflicts among local governments during the development and implementation of the LMS.

During the development or implementation of the LMS, a local government(s) may reach an impasse on a particular issue or position. The local government has an opportunity to exercise the following LMS Conflict Resolution Procedure which has been adopted by the Palm Beach County LMS Steering Committee.

STEP 1 The local government would submit a letter of dispute (LOD) to the Palm Beach County DEM Director explaining in as much detail as possible, describing their concern and position along with documentation to support their position. Also, they would outline potential alternative solutions.

STEP 2 The DEM would review the LOD making sure that it clearly outlines the position of the local government(s) and provides sufficient information supporting their position so the dispute in question can be readily understood by the members of the Conflict Resolution Subcommittee. If the DEM determines that additional facts are needed to describe the dispute outlined in the LOD, the DEM will provide, in writing a letter identifying the information that will clarify the position of the disputing party.

STEP 3 Once the LOD is determined to be complete, within (7) calendar days the County DEM staff will notify and arrange a telephone conference call or a meeting of the Steering Committee Chair and TCRPC representative to select individuals to serve on the Conflict Resolution Subcommittee. Before the selection process is completed, a verification of a willingness to serve will have been completed. (Only voting members or alternates of the Steering Committee are eligible to serve on the Subcommittee).

STEP 4 Within a day of the Subcommittee selection, (see STEP 3), the DEM staff will send a follow-up letter to each Subcommittee confirming their appointment.

STEP 5 Included with the follow-up letter will be the LOD and any supportive materials provided by the disputing party.

STEP 6 In an effort to expedite the process, the DEM staff will make every attempt to schedule the meeting within two (2) calendar weeks from the date the LOD has been determined complete.

STEP 7 The conflict resolution meeting is held. The DEM will provide staff to document the proceedings of the meeting. Every effort on the part of the two parties will attempt to resolve the impasse at the meeting.

STEP 8 If resolution is achieved, the DEM staff will prepare a memorandum documenting the issue and the mutually agreed upon resolution. The memorandum will contain three signature blocks, one for the Chair of the Subcommittee and two for the representatives of the disputing parties. By their signature, all parties will formally agree to the mediated result. A copy will be provided to each party and another copy filed at the DEM.

STEP 9 If no resolution is achieved at the meeting, within seven (7) days following the conclusion of the conflict resolution meeting, the Subcommittee will develop an alternative proposal which will be proffered to the disputing party. If accepted, the DEM staff will implement STEP 8; however, if resolution is still not achieved, the process will move to STEP 9.

STEP 10 If the impasse is not resolved at the Subcommittee level, the DEM will schedule a meeting of the full LMS Steering Committee. In an effort to continue to try to resolve the impasse expeditiously, the DEM staff will make every attempt to schedule the meeting within two (2) calendar weeks from the date that a solution cannot be achieved at the Subcommittee level. Each member will be sent a copy of the LOD and any supportive materials provided by the disputing party. The disputing party will be notified of the meeting date and time.

STEP 11 A meeting of the Steering Committee is held. The representative of each disputing party will present their positions and the Chair of the Subcommittee will present the views of Conflict Resolution Subcommittee. Based on the ensuing discussion, hopefully resolution will be achieved. At the end of the meeting, if no mutually acceptable compromise is achieved, the Steering Committee will vote to accept one solution from among the offered solutions or those that may developed at this special Steering Committee meeting. This resolution vote of the Steering Committee will be final.

The outcome of the meeting will be detailed in a memorandum of understanding that will be prepared by the DEM. This memorandum will be signed by the Steering Committee.

Thereafter, a disputing party can exercise the legal remedy of going to court.

SECTION 7.0: LMS REVISION PROCEDURE

This Section describes the LMS revision procedure in partial fulfillment of the following FEMA requirement:

Requirement §201. 6(c)(4)(i): [The plan maintenance process **shall** include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Comments on the 2009 LMS Update Process

The Palm Beach County Local Mitigation Strategy deviated somewhat from the standard update process described in the section below for the 2009 plan submittal cycle for the following reasons. With the agreement of the LMS Steering Committee and the Palm Beach County Division of Emergency Management, several significant enhancements to the LMS plan format and content are currently under development, but could not be accomplished in time for the November 2009 submission. Rather than making substantial short-lived changes to the existing plan while also working on an enhanced plan, it was decided to minimally update the 2004 plan as necessary for compliance purposes, while including some sections indicative of the direction of the planned enhancements. This has caused certain inconsistencies in plan content.

It was also determined by the LMS Steering Committee and the Planning Committee that the plan update process was unnecessarily complex and time consuming. The update procedures described in this section of the plan are expected to be streamlined to better accommodate the current LMS committee structure, speed the revision process, and enhance opportunities for involvement of the public, businesses, educational institutions and NGO organizations.

For the 2009 update, the LMS Coordinator is working closely with the Steering Committee to execute proposed changes in the plan content and format. When approved, changes will be posted to the Palm Beach County Emergency Management website for review and comment by the LMS workgroup and public comment will be invited.

The LMS is a dynamic planning process that results in the development of set of prioritized projects and initiatives with the goal of mitigating hazard impacts. To assure that the LMS remains current and relevant, it is important that it be periodically updated.

In developing the updating process, two key sources were consulted and shaped the process and procedures developed herein: Section 163.3191, Florida Statutes, the evaluation and appraisal process of local government comprehensive plans, and the American Red Cross, Ten-Step Informative Model. A key objective in the development of the process was to keep it from being bureaucratic and cumbersome.

Based on the information provided in a survey made of local governments in Palm Beach County, it was the opinion of the majority that the interval between LMS updates be five years. Further, respondents also indicated that there needed to be some abbreviated reassessment of the LMS following a declared emergency (e.g., hurricane, tornado, hazardous spill in a major traffic corridor).

The regular LMS Review/Update process is depicted in **Figure 7.1**, while the process that would occur following a presidentially declared emergency event is graphically portrayed in **Figure 7.2**.

An LMS Review/Update Subcommittee is responsible for preparing the update reports and submitting them to the Steering Committee for final approval.

The procedures for the regular update of the LMS is described in **Section 7.1** and **Section 7.2** outlines the procedures to be followed subsequent to a declared emergency.

Objective: To provide a rational, uncomplicated process to evaluate the effectiveness of the existing LMS and update the strategy.

The methodologies of the Palm Beach County All Hazards Local Mitigation Strategy are monitored on a continuous basis by the Palm Beach County Division of Emergency Management's Senior Mitigation Planner. This process is to ensure that the most critical mitigation initiatives are identified within the county. And to ensure that mitigation projects are identified and completed for the unincorporated county and the jurisdictions to maximize the effectiveness of the existing LMS.

7.1 REGULAR LMS UPDATE PROCEDURES

The regular updating process will occur every five years. The administrative steps, as described below, constitute the procedures that will be followed.

STEP 1 The Palm Beach County Division of Emergency Management (DEM) will activate the update process by notifying each member of LMS Update/Review Subcommittee of the initial organizational meeting. At that time, the DEM requests informational update on those serving on the LMS Update/Review Subcommittee (name of person, address, telephone and fax number, and e-mail address, if available). At this time, the public and other organizations would be invited to attend meeting/meetings to receive additional comments and suggestions concerning revisions.

STEP 2 DEM prepares meeting agenda in coordination with the Chair of the LMS Update/Review Subcommittee and distributes a week in advance of the meeting to members of the LMS Update/Review Subcommittee.

STEP 3 LMS Update/Review Subcommittee held. Brief review of review/updating process discussed. Discussion of whether evaluation criteria is still appropriate or modifications or additions needed due to change of conditions over the period since the last update process occurred. Data needs reviewed, data sources identified, responsibility for collecting information assigned to members.

STEP 4 Draft report prepared. Evaluation criteria to be addressed includes:

A. Changes in the community and government processes which are hazard-related and have occurred since the last LMS review;
   1. Community Change
      a. Growth and development in hazard vulnerable areas;
      b. Impact of actions resulting from growth that adversely affect natural resources in vulnerable areas, such as seawalling, beach erosion, heightening deposition in inlets;

c. Demographic changes;
d. New hazards identified;
e. Changes in community economic structure; and
f. Special needs population changes

2. Government process changes
   a. New or changing federal and state laws, policies, and regulations;
   b. Changes in funding sources or requirements;
   c. Change in priorities for implementation;
   d. Changes in government structure; and
   e. Shifts in responsibility and mitigation committee resources

B. Progress in implementing LMS initiatives and projects - The LMS initiatives and projects as compared with actual results at the date of the report;
C. Effectiveness of the previously implemented initiatives and projects;
D. Evaluation of unanticipated problems and opportunities that may have occurred between the date of adoption and date of report;
E. Evaluation of hazard-related public policies, initiatives, and projects; and
F. Review and discussion of the effectiveness of public and private sector coordination and cooperation.

STEP 5 DEM coordinates and organizes second meeting of LMS Update/Review Subcommittee. Draft LMS update report distributed to the participants prior to scheduled meeting. Meeting held. Consensus reached on changes to draft.

STEP 6 DEM incorporates modifications/additions resulting from LMS Update/Review Subcommittee meeting.

STEP 7 DEM, in consultation with Steering Committee Chair, establishes appropriate method(s) to solicit public input. DEM responsible for public noticing/advertising requirements, if any. Besides LMS Update/Review Subcommittee members, all Steering Committee members informed and requested to attend public meeting.

STEP 8 Public meeting held. DEM presents findings, conclusions, and recommendations of LMS effort.

STEP 9 DEM distills and synthesizes public comments, and circulates them among LMS Update/Review Subcommittee members for comment. If comments are extensive and/or controversial, meeting of LMS Update/Review Subcommittee scheduled and organized by DEM.

STEP 10 If appropriate, meeting of LMS Update/Review Subcommittee held. Comments discussed. Consensus reached.

STEP 11 DEM modifies draft report based on the outcome of the results of the LMS Update/Review Subcommittee meeting (STEP 10), or makes modifications resulting from public comments generated during STEP 9.

STEP 12 DEM schedules and notifies Steering Committee members of meeting to review Draft LMS update report. Copy of Draft distributed to Committee members in advance of scheduled meeting. DEM and members of the LMS Update/Review Subcommittee prepare presentation.

STEP 13 DEM and members of the LMS Update/Review Subcommittee present draft LMS update report to the Steering Committee. Steering Committee members make comment on draft report. Discussion ensues among members. Consensus reached on modifications to draft report. If agreement cannot be reached by certain local governments on certain issue(s) and/or project prioritization(s), conflict resolution process may be triggered for those specific items to which parties cannot agree. Vote taken securing approval of the draft LMS update report, contingent upon integrating Steering Committee comments into draft report.

STEP 14 DEM finalizes LMS Update Report. Copies distributed to Steering Committee members.

STEP 15 Each Steering Committee member presents the LMS Update Report to their local governing body, and other interested parties. If there are new or modified recommendations that their local government could implement to further the county-wide LMS, member seeks direction from governing body to implement appropriate strategies.

7.2 DECLARED EMERGENCY ASSESSMENT

Should a declared emergency occur, a special review will be triggered. The administrative steps, as described below, constitute the procedures that will be followed.

STEP 1 Within six (6) months following a declared emergency event, the DEM will initiate a post disaster review and assessment. The DEM will activate the assessment. Each member of the LMS Update/Review Subcommittee will be notified that the assessment process is being commenced.

STEP 2 The DEM will draft a Technical Report. The purpose of the report is to document the facts of the event, and assess whether the LMS effectively addressed the hazard. The Report should contain and answer, at a minimum, the following:

A. Identify whether the hazard creating the declared emergency has been addressed in the LMS;
B. Prepare documentation of the event: the magnitude of the event, areal extent of damages, specific damages sustained (public infrastructure (e.g., potable water and wastewater treatment and collection systems) and private infrastructure (e.g., utilities, power);
C. Discuss impacts to private sector, such as obstacles to recovery, utilization local vendor, deficits in types of products needed, accessibility of vendor suppliers, demand for space for temporary relocation, local business contingency plans, etc.;
D. Analyze effectiveness of coordination among institutional entities (e.g., local governments, Florida Light & Power, Southern Bell, Red Cross, Salvation Army, South Florida Water Management District, FDCA, Florida Department of Transportation) and make recommendations, as necessary;

E. Evaluate the accuracy of the hazard vulnerability and risk assessment in LMS relative to actual event;
F. Focus on LMS initiatives/projects that had been implemented to mitigate impacts of the type of hazard creating the emergency event and evaluate effectiveness;
G. Discuss unanticipated impacts, and identify potential mitigation measures; and
H. Synthesize information and prepare conclusions. Recommend whether the LMS needs to be amended.

STEP 3 DEM schedules a meeting of LMS Update/Review Subcommittee and distributes copies of draft Technical Report prior to meeting.

STEP 4 Meeting of LMS Update/Review Subcommittee held. Members discuss the Report findings, conclusions, and recommendations, and make a determination whether the LMS needs to be amended.

STEP 5 If conclusion that NO modification needed for LMS, Report is approved and DEM transmits to local governments.

STEP 6 If it is determined that the LMS is to be amended, DEM prepares Draft Amended LMS. The Amended LMS should:

A. Utilize information from Technical Report;
B. Provide justification of need to amend LMS;
C. Contain a review and analysis of existing LMS Initiatives/Projects in light of new Initiatives/Projects recommended in Technical Report; and
D. Include a re-prioritization of Initiatives/Projects.

STEP 7 LMS Update/Review Subcommittee reviews and comments on Draft Amended LMS. Draft Amended LMS is provided to each member, in advance of the scheduled meeting.

STEP 8 DEM, in consultation with Steering Committee Chair, establishes appropriate method(s) to solicit public input. DEM responsible for public noticing/advertising requirements, if any. Besides LMS Update/Review Subcommittee members, all Steering Committee members informed and requested to attend public meeting.

STEP 9 Public meeting held. DEM presents findings, conclusions, and recommendations of Draft Amended LMS.

STEP 10 DEM distills and synthesizes public comments, and circulates them among LMS Update/Review Subcommittee members for comment. If comments are extensive and/or controversial, meeting of LMS Update/Review Subcommittee scheduled and organized by DEM.

STEP 11 If appropriate, meeting of LMS Update/Review Subcommittee held. Comments discussed. Consensus reached.

STEP 12 DEM modifies draft report based on the outcome of the results of the LMS Update/Review Subcommittee meeting (STEPS 7 & 11), or makes modifications resulting from public comments generated during STEP 9.

STEP 13 DEM schedules and notifies Steering Committee members of meeting to review Draft Amended LMS. Copy of Draft distributed to the Committee members in advance of scheduled meeting. DEM and members of the technical subcommittee/committee prepare presentation.

STEP 14 DEM and members of the LMS Update/Review Subcommittee present Draft Amended LMS to the Steering Committee. Steering Committee members make comment on Draft. Discussion ensues among members. Consensus reached on modifications to draft report. If agreement can not be reached by certain local governments on certain issue(s) and/or initiative/project prioritization(s), conflict resolution process may be triggered for those specific items parties can not agree upon. Vote taken securing approval of the Draft Amended LMS, contingent upon integrating Steering Committee comments into Draft Amended LMS.

STEP 15 DEM finalizes Amended LMS. Copies distributed to Steering Committee members.

STEP 16 Each Steering Committee member presents the Amended LMS to their local governing body, and other interested parties. If there are new or modified recommendations that their local government could implement and further the county-wide LMS, member seeks direction from governing body to implement appropriate strategies.

Appendix A: Risk & Vulnerability Analyses Data

The risk and vulnerability data presented in this Appendix are submitted in partial fulfillment of the following FEMA requirements:

> **RISK ASSESSMENT: §201.6(c)(2):** The plan shall include a risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.
>
> **Requirement §201.6(c)(2)(iii):** For multi-jurisdictional plans, the risk assessment **must** assess each jurisdiction's risks where they vary from the risks facing the entire planning area.
>
> **Requirement §201.6(c)(2)(i):** The risk assessment **shall** include a] description of the … location and extent of all natural hazards that can affect the jurisdiction. The plan **shall** include information on previous occurrences of hazard events and on the probability of future hazard events.
>
> **Requirement §201.6(c)(2)(ii):** The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.

Additional information relating to these requirements is contained in Section 3, in the Palm Beach County Hazard Environment, in Appendix C, and in the new hazard write-up sections of the Plan.

This Appendix presents the results of updated risk, vulnerability and impact analyses for the original hazards identified in the 2004 Plan. The summary tables for these analyses are indicated below:

Table A-1 Relative Vulnerability to hazards by local government

Table A-2 Relative Probability of hazards by local government

Table A-3 Data Sources used for the Palm Beach County Hazard Vulnerability and Risk Assessment

Table A-4 Palm Beach County Hazard Vulnerability and Risk Assessments by Jurisdiction

Table A-4 (a) Risk Assessment by Hazard by Jurisdiction

Table A-5 Palm Beach County Impact Analysis

Table A-1: Relative Vulnerability to Hazards, by Local Government

Hazard Category **Community Vulnerability** H: High M: Medium L: Low V: Very Low	Unincorporated County	MUNICIPALITIES																																				
		Atlantis, City of	Belle Glade, City of	Boca Raton, City of	Boynton Beach, City of	Briny Breezes, Town of	Cloud Lake, Town of	Delray Beach, City of	Glen Ridge, Town of	Golf, Village of	Greenacres, City of	Gulf Stream, Town of	Haverhill, Town of	Highland Beach, Town of	Hypoluxo, Town of	Juno Beach, Town of	Jupiter, Town of	Jupiter Inlet Colony, Town of	Lake Clarke Shores, Town of	Lake Park, Town of	Lake Worth, City of	Lantana, Town of	Loxahatchee Groves	Manalapan, Town of	Mangonia Park, Town of	North Palm Beach, Village of	Ocean Ridge, Town of	Pahokee, City of	Palm Beach, Town of	Palm Beach Gardens, City of	Palm Beach Shores, Town of	Palm Springs, Village of	Riviera Beach, City of	Royal Palm Beach, Village of	South Bay, City of	South Palm Beach, City of	Tequesta, Village of	Wellington, Village of	West Palm Beach, City of
NATURAL HAZARDS																																						
Flood	H	M	M	H	H	M	M	H	M	M	M	M	M	M	L	M	H	M	M	H	H	H	H	L	M	H	L	M	H	H	M	M	H	L	M	M	M	H	H
Hurricane/tropical storm	H	M	H	H	H	H	M	H	M	M	M	H	M	H	M	H	H	H	M	H	H	H	H	M	M	H	H	H	H	M	H	M	H	M	H	H	M	M	H
Tornado	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Severe thunderstorm and lightning	H	M	M	M	M	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	H	M	M	M	M	H	M	M	M	M	M	H	M	M	M	M	M	H
Drought	H	L	H	M	M	L	L	M	H	H	L	M	L	H	L	M	M	M	L	L	L	L	H	L	L	M	L	H	M	M	L	M	L	L	H	L	L	H	M
Temperature extremes	M	L	L	L	M	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	M	L	L	H	L	L	L	M	L	L	L	L	L	H	L	M	M
Agricultural pests and disease	H	V	H	L	L	L	V	L	V	V	L	L	V	V	V	L	M	V	V	V	V	V	M	V	V	L	V	H	L	M	V	V	V	V	H	L	V	M	L
Wildfire/urban interface zone	H	L	H	M	L	V	L	L	M	M	L	L	L	V	V	L	M	V	V	V	L	L	M	V	V	L	V	H	V	M	V	V	L	M	H	V	V	M	M
Muck fire	H	V	H	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	L	V	V	V	V	H	V	V	V	V	V	L	H	V	V	L	L
Soil/beach erosion	M	L	M	M	M	M	V	M	H	H	V	M	V	H	V	H	H	V	L	V	M	M	L	V	M	M	H	V	H	M	M	L	H	V	V	H	M	V	V
Seismic hazards (sink holes/soils failure)	L	V	V	V	M	V	V	V	M	M	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Tsunamis	L	M	V	H	H	H	M	H	M	M	L	M	L	H	H	H	H	H	H	H	H	H	V	H	L	H	H	V	H	M	H	L	L	V	V	H	V	V	L
TECHNOLOGICAL HAZARDS																																						
Hazardous materials accident	M	L	M	M	M	V	L	H	H	H	M	V	M	V	H	L	H	V	M	M	M	M	M	H	M	M	V	L	V	M	V	M	H	L	M	L	V	M	H

Hazard Category		MUNICIPALITIES																																					
Community Vulnerability H: High M: Medium L: Low V: Very Low	Unincorporated County	Atlantis, City of	Belle Glade, City of	Boca Raton, City of	Boynton Beach, City of	Briny Breezes, Town of	Cloud Lake, Town of	Delray Beach, City of	Glen Ridge, Town of	Golf, Village of	Greenacres, City of	Gulf Stream, Town of	Haverhill, Town of	Highland Beach, Town of	Hypoluxo, Town of	Juno Beach, Town of	Jupiter, Town of	Jupiter Inlet Colony, Town of	Lake Clarke Shores, Town of	Lake Park, Town of	Lake Worth, City of	Lantana, Town of	Loxahatchee Groves	Manalapan, Town of	Mangonia Park, Town of	North Palm Beach, Village of	Ocean Ridge, Town of	Pahokee, City of	Palm Beach, Town of	Palm Beach Gardens, City of	Palm Beach Shores, Town of	Palm Springs, Village of	Riviera Beach, City of	Royal Palm Beach, Village of	South Bay, City of	South Palm Beach, City of	Tequesta, Village of	Wellington, Village of	West Palm Beach, City of
Radiological accidents (including nuclear power plant accidents)	L	V	V	V	V	V	V	V	V	V	V	V	V	V	V	L	L	L	V	V	V	V	V	V	V	V	V	V	V	V	L	L	V	V	V	V	V	V	L
Communications failure	M	V	L	M	M	V	V	M	L	L	V	V	V	V	V	V	M	V	L	M	M	M	M	V	L	V	V	L	V	M	L	L	M	L	L	M	M	V	M
Hazardous material release	M	L	M	M	H	M	M	H	L	L	M	V	L	V	L	L	M	L	M	M	M	M	L	L	L	M	V	L	V	M	V	L	M	M	M	L	L	M	H
Transportation system accident	H	L	H	M	H	V	L	H	L	L	V	V	M	V	L	L	H	V	M	M	M	M	M	L	M	M	V	L	V	V	V	L	H	L	H	L	M	M	H
Wellfield contamination	M	L	V	M	M	V	M	M	H	H	V	V	V	V	V	L	M	V	L	L	L	L	M	V	L	M	V	V	V	M	V	V	M	L	V	V	L	M	H
Power failure (outages)	M	V	M	M	M	V	V	M	M	M	V	V	V	V	V	L	M	V	V	V	V	V	M	V	V	M	V	M	V	M	L	M	L	M	M	H	M	L	M
SOCIETAL HAZARDS																																							
Civil disturbance	M	V	L	L	M	V	V	M	V	V	V	V	V	V	V	V	L	V	V	L	L	L	L	V	L	L	V	V	V	L	V	L	L	V	V	V	L	V	M
Terrorism and sabotage	L	V	V	L	L	V	V	L	V	V	L	V	V	V	V	L	L	V	V	L	L	L	L	V	L	V	V	V	M	V	V	L	L	V	V	V	L	V	M
Immigration crisis	M	V	M	L	M	V	V	M	V	V	V	V	V	V	V	V	L	V	V	L	L	L	L	V	V	V	L	M	V	V	M	L	M	V	M	L	V	V	M

Table A-2: Relative Probability of Hazards, by Local Government

Hazard Category **Community Vulnerability** H: High M: Medium L: Low V: Very Low	Unincorporated County	MUNICIPALITIES																																				
		Atlantis, City of	Belle Glade, City of	Boca Raton, City of	Boynton Beach, City of	Briny Breezes, Town of	Cloud Lake, Town of	Delray Beach, City of	Glen Ridge, Town of	Golf, Village of	Greenacres, City of	Gulf Stream, Town of	Haverhill, Town of	Highland Beach, Town of	Hypoluxo, Town of	Juno Beach, Town of	Jupiter, Town of	Jupiter Inlet Colony, Town of	Lake Clarke Shores, Town of	Lake Park, Town of	Lake Worth, City of	Lantana, Town of	Loxahatchee Groves	Manalapan, Town of	Mangonia Park, Town of	North Palm Beach, Village of	Ocean Ridge, Town of	Pahokee, City of	Palm Beach, Town of	Palm Beach Gardens, City of	Palm Beach Shores, Town of	Palm Springs, Village of	Riviera Beach, City of	Royal Palm Beach, Village of	South Bay, City of	South Palm Beach, City of	Tequesta, Village of	Wellington, Village of	West Palm Beach, City of
NATURAL HAZARDS																																						
Flood	H	M	M	H	H	M	M	H	M	M	M	H	H	H	H	H	H	H	M	H	H	M	M	H	M	H	H	M	H	H	H	M	H	L	M	H	M	M	H
Hurricane/tropical storm	H	M	M	H	H	H	M	H	M	M	M	H	M	H	H	H	H	H	M	H	H	M	H	H	M	H	H	M	H	M	H	M	H	M	M	H	M	M	H
Tornado	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	M	L	L	L	L	M	L	M	M	M	L	L	L	M	M	M	L	M	H
Severe thunderstorm/ lightning	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	H	H
Drought	H	L	H	L	M	L	L	M	L	L	L	L	L	L	L	L	M	L	L	L	L	L	M	L	L	L	L	H	M	M	L	L	L	L	H	L	L	H	M
Temperature extremes	M	L	M	L	L	V	L	L	L	L	L	V	L	V	V	V	H	V	L	V	V	L	M	V	L	L	V	M	L	L	V	L	L	L	M	L	L	M	M
Agricultural pests and disease	H	V	H	L	M	V	V	M	V	V	L	V	L	V	V	V	M	V	L	V	V	L	M	V	L	V	V	H	L	L	V	L	L	V	H	L	V	M	L
Wildfire/urban interface zone	H	V	H	L	M	V	V	L	V	V	L	V	L	V	V	V	M	V	L	V	L	L	H	V	L	L	V	H	V	L	V	V	L	M	H	V	V	M	M
Muck fire	H	V	H	V	L	V	V	L	V	V	V	V	V	V	V	V	V	V	V	V	V	L	V	V	V	V	V	H	V	V	V	L	L	H	V	V	L	L
Soil/beach erosion	M	V	L	M	M	M	V	M	V	V	V	M	V	M	M	H	H	H	V	V	M	V	V	H	V	M	H	L	H	V	H	V	H	V	L	H	M	V	L
Seismic hazards (sink holes/soils failure)	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	L	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Tsunamis	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	L	V	V	V	V	V	V	L
TECHNOLOGICAL HAZARDS																																						
Hazardous materials accident	M	L	L	M	M	V	V	L	L	V	V	V	V	V	V	V	L	V	V	L	L	V	L	V	L	M	V	M	V	L	V	L	M	L	M	L	V	M	H

Hazard Category **Community Vulnerability** H: High M: Medium L: Low V: Very Low	Unincorporated County	MUNICIPALITIES																																						
		Atlantis, City of	Belle Glade, City of	Boca Raton, City of	Boynton Beach, City of	Briny Breezes, Town of	Cloud Lake, Town of	Delray Beach, City of	Glen Ridge, Town of	Golf, Village of	Greenacres, City of	Gulf Stream, Town of	Haverhill, Town of	Highland Beach, Town of	Hypoluxo, Town of	Juno Beach, Town of	Jupiter, Town of	Jupiter Inlet Colony, Town of	Lake Clarke Shores, Town of	Lake Park, Town of	Lake Worth, City of	Lantana, Town of	Loxahatchee Groves	Manalapan, Town of	Mangonia Park, Town of	North Palm Beach, Village of	Ocean Ridge, Town of	Pahokee, City of	Palm Beach, Town of	Palm Beach Gardens, City of	Palm Beach Shores, Town of	Palm Springs, Village of	Riviera Beach, City of	Royal Palm Beach, Village of	South Bay, City of	South Palm Beach, City of	Tequesta, Village of	Wellington, Village of	West Palm Beach, City of
Radiological accidents (including nuclear power plant accidents)	V	V	V	V	V	V	V	L	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Communications failure	M	V	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	V	L	L	L	L	L	M	V	L	M	
Hazardous material release	L	L	L	L	L	V	L	H	L	V	L	V	V	V	V	L	L	V	V	L	L	V	L	V	M	M	V	L	V	L	V	V	L	L	L	L	L	M	H	
Transportation system accident	H	L	M	M	M	V	L	H	L	V	L	V	L	V	V	V	L	V	V	L	L	L	M	V	M	M	V	M	V	M	V	V	M	L	M	L	L	M	H	
Wellfield contamination	M	L	V	M	M	V	V	M	L	V	V	V	V	V	V	V	L	V	V	L	L	V	M	V	M	L	V	L	V	L	V	V	M	L	L	V	V	M	H	
Power failure (outages)	M	M	V	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	L	M	M	M	M	M	M	L	M	M	M	M	M	M	H	M	V	M		
SOCIETAL HAZARDS																																								
Civil disturbance	M	V	L	L	L	V	V	M	V	V	L	V	V	V	V	V	L	V	V	L	L	V	V	V	L	L	V	L	L	L	V	V	L	V	L	V	V	V	M	
Terrorism and sabotage	L	V	V	L	L	V	V	L	V	V	V	V	V	V	V	V	L	V	V	V	L	V	V	L	V	V	V	L	L	V	V	V	L	V	L	V	V	V	M	
Immigration crisis	L	V	L	L	L	L	V	M	V	V	V	L	V	L	L	L	L	L	V	V	L	V	L	L	V	L	L	V	V	V	L	V	L	V	L	L	V	V	M	

Table A-3: Data sources used for the Palm Beach County Hazard Vulnerability and Risk Assessment

Natural Hazards - Hazards resulting from weather conditions, geologic conditions, or disruption of natural systems	
Hurricanes and Severe Storms (Includes Tropical Storms and Northeasters)	
Source	**Data Type**
Natural Hazards Research Center	Historical and current data on all types of natural hazards
Atlantic Hurricane Tracking Database	Historical data on hurricane tracks and intensities
NOAA Tropical Cyclone Database	Historical hurricane data
Colorado State University (Dr. Gray on-line site)	Hurricane probability
NASA Natural Disaster Reference Database	Historical data on all types of natural hazards
National Weather Service	Weather statistics
National Climate Data Center - On-Line Data Base	Weather statistics
Atlantic Ocean and Meteorological Laboratory, Hurricane Research Division	Hurricane forecast models
Federal Emergency Management Agency	Emergency management procedures
Tropical Storm Watch Database	Tropical storm data worldwide
Flood Insurance Rate Maps and Community Status Book	Areas vulnerable to potential rising water
Storm Surge Atlas for Palm Beach County (SLOSH model)	Areas vulnerable to storm surge flooding based on the SLOSH model
U. S. Geological Survey	Base maps and historical flood plane and elevation data
Florida State University (Meteorology Department)	Data and expertise concerning all Florida natural hazards
Florida Atlantic University	Data and expertise concerning all Florida natural hazards
National Severe Storms Laboratory	Storm effects data
Independent Insurance Agents of America (Natural Disaster Risk Database)	Probability data and estimated exposure Building code recommendations to reduce exposure
Florida Department of Community Affairs, Division of Emergency Management	*The Arbiter of Storms (TAOS)*@ maps and computer model projections as well as technical support and data

Florida Department of Environmental Protection	Environmental risk, exposure to hurricanes, environmental effects and hazards
Florida Game and Fresh Water Fish Commission	Hurricane effects of fish and wildlife
Florida Department of Corrections	Prison statistics and emergency management plans
Florida Department of Education	School and Board of Education emergency guidelines
South Florida Water Management District	Climatic and weather data, hydrologic data, water release schedules, and emergency management plans
Treasure Coast Regional Planning Council	Building codes and impacts of proposed statewide unified building code
Palm Beach County Airports Department	Weather data and hurricane protection procedures
Palm Beach County Comprehensive Growth Management Plan	Land management, zoning, and hurricane mitigation related ordinances
Palm Beach County Planning, Zoning, and Building Department	Building codes and zoning ordinances
Palm Beach County Property Appraiser	Tax assessor records for use in determining dollar value of exposed property
Palm Beach County Automated Information Management	Map products and GIS data
Palm Beach County Engineering and Public Works Department	Engineering, drainage, road elevations, and storm water data
Palm Beach County Environmental Resources Management Department	Environmental and beach erosion data
Palm Beach County Fire and Rescue Department	Critical facilities locations and emergency management plans
Palm Beach County Health Department	Critical facilities and health risk data
Palm Beach County School Board	Schools, shelter, and critical facilities data and emergency management plans
Palm Beach County Law Library	Building codes and ordinances
Palm Beach County Parks & Recreation Department	Environmental and recreational data and potential impacts data
Palm Beach County Public Safety Department Division of Emergency Management	Emergency management plans, historical data, critical facilities, special needs, and general guidance
Palm Beach County Division of Criminal Justice	County prison population and emergency management plans

Division of Emergency Medical Services	Emergency management plans
Division of Animal Regulation	Animal protection, regulation, and control plans following natural disasters (hurricanes)
Palm Beach County Sheriff Department	Emergency management plans and law enforcement procedures following a natural disaster
Palm Beach County Tourist Development Council	Potential economic loss and specific areas of economic vulnerability
Palm Beach County Water Utilities	Critical facilities locations and emergency management procedures
Palm Beach County has a total of 38 municipalities and all are participating in a unified LMS process with the County. Various departments corresponding to The Property Appraisers Office; Public Works; Public Safety; Health Department; Building, Planning, and Zoning; and Fire and Rescue will be contacted within each municipality.	All municipalities will be contacted to determine individual vulnerabilities, populations at risk, and dollar values of exposure. Emergency plans building codes, storm water management engineering, and police and fire emergency management plans will be reviewed
Palm Beach County Red Cross	Historical data, shelter data, and emergency management plans
Hospitals, Clinics, and Nursing Facilities	Critical facilities locations, special equipment, special needs, and evacuation plans
Florida Power and Light and Other Municipal/Private Power Companies (Lake Worth Utilities, etc.)	Power grid vulnerabilities, structure, and emergency management plans
Home Depot/Lowes	Emergency management supply plans for preparation and recovery
Publix/Winn Dixie	Emergency food supply plans
Southern Bell	Critical facilities locations, and emergency communication maintenance plans
AT&T Wireless Services	Critical facilities locations, and emergency communication maintenance plans
U. S. Cellular Wireless Communications	Critical facilities locations, and emergency communication maintenance plans
The Palm Beach Post	Historical hurricane data
Local Radio and Television Stations	Critical facilities location and emergency management plans (operating plans) during natural disaster
Tornadoes and Thunderstorms	
Natural Hazards Research Center	Historical and current data on all types of natural hazards

The Tornado Project On-Line	Historical data
Optical Transient Detector Data Base	Lightning associated with thunder storms (lightning statistics)
NASA Natural Disaster Reference Database	Historical data all types of natural hazards
National Weather Service	Weather statistics
National Climate Data Center - On-Line Data Base	Weather statistics
NOAA Wind Related Fatalities Data Base	Wind related fatalities
NOAA Tropical Prediction Center	Storm predictions
Florida State University	Data and expertise concerning all Florida natural hazards
Florida Atlantic University	Data and expertise concerning all Florida natural hazards
National Severe Storms Laboratory	Storm and tornado statistics and storm effects
Independent Insurance Agents of America (Natural Disaster Risk Database)	Financial data concerning losses resulting from thunder storms and tornadoes
Florida Department of Community Affairs, Division of Emergency Management	Incident reports and historical data
South Florida Water Management District	Climatic data
Palm Beach County Airports Department	Weather data and protection plans and procedures during thunderstorms and tornadoes
Palm Beach County Fire and Rescue Department	Thunderstorm and tornado fire and fatality data
Palm Beach County Public Safety Department Division of Emergency Management	Thunderstorm and tornado historical data
Palm Beach County Division of Emergency Medical Services	Historical data on thunderstorm and tornado related medical emergencies
Palm Beach County has a total of 38 municipalities and all are participating in a unified LMS process with the County. Various departments corresponding to Public Safety; Health Department; and Fire and Rescue will be contacted within each municipality.	Historical data on impacts of thunderstorms and tornadoes at the local level
Palm Beach County Red Cross	Historical data on impacts
Florida Power and Light and Other Municipal/Private Power Companies (Lake Worth Utilities, etc.)	Historical data on impacts to the power grid
Southern Bell	Historical data on communication impacts
AT&T Wireless Services	Historical data on communications disruptions

U. S. Cellular Wireless Communications	Historical data on communications disruptions
The Palm Beach Post	Historical data general
Local Radio and Television Stations	Historical data on losses and possible future losses
Lightning/electromagnetic disturbances (normally included under thunderstorms but along the Gold Coast we believe this hazard is significant enough to be considered alone)	
Natural Hazards Research Center	Lightning research and statistics
NASA Natural Disaster Reference Database	Lightning statistics
National Weather Service	Lightning strike data
National Climate Data Center - On-Line Data Base	Lightning strike data
NOAA Lightning Related Fatalities Data Base	Lightning fatalities
National Lightning Safety Institute (NLSI)	Lightning research and protection measures
Florida State University	Data and expertise concerning all natural hazards
Florida Atlantic University	Data and expertise concerning all natural hazards
University of Florida Lightning Research Laboratory	Current research on lightning causes and effects
National Severe Storms Laboratory	Lightning statistics
Independent Insurance Agents of America (Natural Disaster Risk Database)	Financial losses attributable to lightning and related electromagnetic discharges
Florida Department of Community Affairs, Division of Emergency Management	Data on major fires caused by lightning
Florida Fire Chief's Association	Data on fires caused by lightning
South Florida Water Management District	Data on lightning related losses
Palm Beach County Airports Department	Lightning data and protective measures
Palm Beach County Fire and Rescue Department	Lightning related fires and injuries
Palm Beach County Parks & Recreation Department	Data on lightning related losses
Palm Beach County Public Safety Department Division of Emergency Management	Lightning protection procedures
Division of Emergency Medical Services	Lightning related injuries
Palm Beach County Sheriff Department	Data on communication disruption
Florida Power and Light	Financial losses and power grid disruptions due to lightning
Southern Bell	Financial losses and communications disruptions due to lightning

AT&T Wireless Services	Financial losses and communications disruptions due to lightning
U. S. Cellular Wireless Communications	Financial losses and communications disruptions due to lightning
The Palm Beach Post	Historical data on significant lightning related events
Coastal and Riverine Flooding	
Association of State Floodplain Managers	Floodplain data, flooding statistics, and mitigation approaches
Natural Hazards Research Center	Technical data on all natural hazards
NOAA Flood Related Fatalities Data Base	Flood related fatalities
NOAA Hydrologic Information Center	Hydrologic data
NOAA Tropical Cyclone Database	Rainfall associated with storm type events
NASA Natural Disaster Reference Database	Specific flooding and mitigation data nationwide
NASA Flood Hazard Research Center	Flood research and mitigation approaches
National Weather Service	Climatic data
National Climate Data Center - On-Line Data Base	Weather/rain fall historical data
National Flood Proofing Committee Data Base	Mitigation procedures
National Association of Flood and Storm Water Management Agencies	Storm water management data and procedures
Atlantic Ocean and Meteorological Laboratory, Hurricane Research Division	Historical meteorological data
Federal Emergency Management Authority	Historical flooding data
Tropical Storm Watch Database	Rainfall events and flooding data
Flood Insurance Rate Maps and Community Status Book	Identification of properties within the flood plane
U. S. Geological Survey	Topographic maps
U. S. Army Corps of Engineers	Historical flooding data and flood prevention projects
Dartmouth Flood Observatory	Flooding research
Earth Satellite Corporation (EarthSat) Floodwatch Data Base	Historical flooding data
Florida State University	Data and expertise concerning all Florida natural hazards
Florida Atlantic University	Data and expertise concerning all Florida natural hazards

National Severe Storms Laboratory	Rainfall data and related flooding events
Independent Insurance Agents of America (Natural Disaster Risk Database)	Property and financial losses as a result of flooding
Florida Department of Community Affairs, Division of Emergency Management	Historical data on flooding events in Palm Beach County
Florida Association of Floodplain Managers	Flooding data specific to Florida
Florida Department of Environmental Protection	Environmental parameters and risk associated with flooding
Florida Game and Fresh Water Fish Commission	Wildlife resources impacted by flooding
South Florida Water Management District	Water management, hydrology, and flood prevention procedures
Palm Beach County Planning, Zoning, and Building Department	Zoning ordinances and building codes that affect flood protection
Palm Beach County Property Appraiser	Property value within flood zones
Palm Beach County Automated Information Management	Historical flooding and critical facilities in flood zones
Palm Beach County Engineering and Public Works Department	Highway and storm water management procedures
Palm Beach County Environmental Resources Management Department	Water resources and flooding data
Palm Beach County Fire and Rescue Department	Flooding associated fires and injuries
Palm Beach County Health Department	Disease risk and contamination potential associated with flooding
Palm Beach County Parks & Recreation Department	Recreational resources at risk due to flooding
Palm Beach County Public Safety Department Division of Emergency Management	Historical flooding data and emergency management procedures
Division of Emergency Medical Services	Flooding related injuries
Division of Animal Regulation	Animal control problems associated with flooding
Palm Beach County Sheriff Department	Emergency management procedures associated with flooding
Palm Beach County Water Utilities	Critical facilities at risk due to flooding and potential impacts
Municipal offices to be contacted in participating cities: The Property Appraiser's Office; Public Works; Public Safety; Health Department; Building, Planning, and Zoning; and Fire and Rescue	All municipalities will be contacted to determine individual vulnerabilities, populations at risk, and dollar values of exposure. Emergency plans building codes, storm water management engineering, and police and fire emergency management plans will be reviewed

Independent Drainage Districts	All independent drainage districts will be contacted for historical data and identified areas at risk
Palm Beach County Red Cross	Historical flooding data and repetitively damaged structures data
Florida Power and Light	Flooding emergency plans and critical facilities at risk
The Palm Beach Post	Historical data on flooding incidents
Freezing Temperatures	
National Weather Service	Historical records on freezing temperatures
National Climate Data Center - On-Line Data Base	Historical records on freezing temperatures
U. S. Department of Agriculture - County Extension Agents	Local agricultural data on frequency, impacts, and financial losses due to freezing temperatures
Florida Citrus Commission	Frequency and amount of financial losses to citrus crops due to freezing temperatures and long term industry impacts
Florida Department of Citrus	Frequency and amount of financial losses to citrus crops due to freezing temperatures and current mitigation strategies
Florida Department of Agriculture & Consumer Services	Frequency and amount of financial losses to all agricultural business as a result of freezing temperatures
Florida Farm Bureau	Frequency and amount of financial losses to all agricultural business as a result of freezing temperatures and current mitigation and risk reduction strategies
Florida State University	Agricultural research and new mitigative strategies to reduce freeze impacts
Florida Atlantic University	Freeze impacts to aquaculture industry
University of Florida	Agricultural research and new mitigative strategies to reduce freeze impacts
University of Miami	Agricultural research and new mitigative strategies to reduce freeze impacts
Florida Department of Environmental Protection	Environments at risk from freezing and environmental consequences of current agricultural mitigation strategies
South Florida Water Management District	Climate records and water demands associated with freeze mitigation
Palm Beach County Department of Agriculture	Historical impact and financial losses resulting from freezing temperatures in Palm Beach County

Palm Beach County Citrus and Farming Interest	Historical freeze losses and current mitigation strategies
Palm Beach County Red Cross	Impacts to poor and homeless due to freezing temperatures
Wildfires (Urban interface wildfires and muck fires)	
National Weather Service	Climate data/drought predictions
National Interagency Coordination Center Reports	Wildfire repots
National Climate Data Center - On-Line Data Base	Climate data
U. S. Forest Service	Wildfire reports and preventative measures
U. S. Department of Agriculture - County Extension Agents	Controlled burning/muck deposits
U. S. Geological Survey	Soil types/muck deposits
Florida Geological Society	Soil types/muck deposits
The Wildfire Assessment System	Wildfire statistics and containment procedures
Florida Forest Protection Bureau	Florida specific wildfire statistics and current preventative practices
Florida Department of Environmental Protection	Natural resources at risk and protective measures
Florida Fire Chief's Association	Florida specific wildfire statistics, fire fighting technology, and potential mitigative measures for Florida communities
South Florida Water Management District	Water resources and right of way management practices
Palm Beach County Department of Agriculture	Land use patterns in Palm Beach County to establish areas at risk
Palm Beach County Planning Zoning & Building Department	Land use patterns in Palm Beach County to establish areas at risk
Palm Beach County Parks & Recreation Department	Land use patterns in Palm Beach County to establish areas at risk
Palm Beach County Fire Rescue Department - Fire Prevention Bureau	Land use patterns in Palm Beach County to establish areas at risk and current or in-place protective measures
Wildfire Magazine Data Base	Wildfire statistics
Palm Beach Post	Historical data on Palm Beach County wildfires/muck fires
Drought and High Temperatures	
National Weather Service	Climate data and drought predictions

National Climate Data Center - On-Line Data Base	Climate data
U.S.G.S. Historical and Real Time Data on Water Resources of South Florida	Water resources
U. S. Department of Agriculture - County Extension Agents	Historical data on droughts and the economic impacts to local agriculture
Florida Citrus Commission	Economic losses to the citrus industry from droughts
Florida Department of Citrus	Economic losses to the citrus industry from droughts and current irrigation technology
Florida Forest Protection Bureau	Drought statistics
Florida Department of Environmental Protection	Environmental impacts of droughts to natural ecosystems
Florida Department of Agriculture & Consumer Services	Agricultural losses due to droughts and current irrigation technology
South Florida Water Management District	Water allocations during drought conditions
Palm Beach County Department of Agriculture	County specific economic losses from drought and current economic vulnerability
Palm Beach County Parks & Recreation Department	Recreational resources impacted by droughts
Palm Beach County Water Utilities	Impacts from droughts of the potable water supplies and impacts in urban areas Water rationing plans
Municipal water utilities	Impacts of and water allotment plans during times of droughts in cities Water rationing plans
Erosion (Beach and Waterways)	
U. S. Army Corps of Engineers	Palm Beach County beach erosion statistics and beach restoration projects
Florida Inland Navigational District	Maintenance records for the Intracoastal Waterway and other Palm Beach County navigable waters
South Florida Water Management District	Canal maintenance and erosion
Palm Beach County Environmental Resources Department	Environmental problems associated with erosion control and natural resources threatened by erosion
Palm Beach County Engineering and Public Works Department	Current erosion prevention measures
Palm Beach County Parks & Recreation Department	Current erosion prevention measures
Palm Beach County Coastal Municipalities	Current erosion prevention measures

Jupiter Inlet District	Information on beach erosion in and around Jupiter Inlet
Port of Palm Beach	Information on beach erosion in and around channel and inlet
Agricultural Pest and Diseases	
U. S. Forest Service	Forest diseases and current problem/preventative measures
U. S. Dept. of Agriculture - County Extension Agents	Local agricultural pest and potential exotic treats
U. S. Customs	Current programs to prevent introduction of agricultural pest and diseases
Florida Farm Bureau	Economic losses due to agricultural pest and diseases
Florida Citrus Commission	Citrus losses due to agricultural pest and diseases
Florida Forest Protection Bureau	Forest diseases and current problem/preventative measures
Florida State University	Agricultural research and pest control
Florida Atlantic University	Agricultural research and pest control
University of Florida	Agricultural research and pest control
University of Miami	Agricultural research and pest control
Florida Department of Environmental Protection	Environmental resources at risk and environmental consequences of current or proposed control measures
Florida Department of Agriculture & Consumer Services	Economic losses from agricultural pest and diseases and current control technology
Palm Beach County Department of Agriculture	Economic losses and current control programs
Palm Beach County Parks & Recreation Department	Pest control programs on public lands
Seismic Hazards (Sinkholes, Tidal Waves, and Other Geologic Hazards)	
U. S. Geological Survey	Geologic structure and seismic risk
Florida Geological Society	Geologic structure and soil characteristics
Technological/Manmade Hazards - Hazards due to accidents involving man-made facilities or functions.	
Radiological Hazards	
U. S. Nuclear Regulatory Commission	Nuclear power plant regulation, accident statistics, and emergency procedures
Federal Emergency Management Agency	Nuclear power plant accident statistics, and emergency procedures

National Emergency Management Agency	Nuclear power plant and radiological emergency management procedures
Florida Division of Emergency Management	Nuclear power plant and radiological emergency management procedures
Florida Emergency Preparedness Association	Radiological emergency management procedures
State & Local Emergency Data Users Group Data Base	Radiological accident management database
Florida Power and Light Emergency Plan	Industry emergency management plans
Palm Beach County Division of Emergency Management Comprehensive Emergency Management Plan (CEMP)	Local radiological emergency management plan
Hospital Plans - Both Radiological Materials Disposal (Hazardous Waste) and Mass Radiation Casualties or Nuclear Accident Plans	Local radiological emergency plans and safeguards
Hazardous Material	
Federal Emergency Management Agency	Hazardous material emergency management guideline
National Transportation Safety Board	Hazardous material transport regulation, spill cleanup procedures, and spill statistics
Occupational Safety and Health Agency	Hazardous material handling requirements
U. S. Environmental Protection Agency	List of hazardous materials
Hazardous Chemicals Database (On-line)	Hazardous materials data
Material Safety Data Sheets (On-line)	Specific chemical facts
State Emergency Response Commission (SERC) Emergency Plan for Hazardous Materials	Spill response procedures
Florida District and Local Emergency Planning Committee (LEPC) Emergency Plan for Hazardous Materials	Local sources and emergency management plans (vulnerabilities)
Facilities Database for Users of Extremely Hazardous Substances (EHS) and Hazardous Materials	Geo-referenced local database of users
Florida Division of Emergency Management	Methodology for handling hazardous material releases
Florida Emergency Preparedness Association	Methodology for handling hazardous material releases
Florida Department of Transportation	Highway spill data for hazardous material spill data Methodology for handling hazardous material releases
State & Local Emergency Data Users Group Database	Spill and release of hazardous materials statistics

Florida Fire Chiefs Association	Hazardous material emergency plans and containment procedures Spill/release statistics
Palm Beach County Division of Emergency Management	Methodology for handling hazardous material releases
Palm Beach County Fire Rescue Department	Methodology for handling hazardous material releases
Municipal Fire and Police Departments	Methodology for handling hazardous material releases
Palm Beach County Health Department	Methodology for handling hazardous material releases and emergency treatment procedures
Identified Users of EHS Emergency Plans	Industry control and emergency management plans for hazardous material
Local Gasoline and Natural Gas Companies	Location of critical facilities/infrastructure elements
Transportation System Accidents	
Federal Aeronautical Administration	Aircraft accident statistics and airport safety procedures
National Transportation Safety Board	Aircraft accident statistics
U. S. Coast Guard	Boating/shipping accidents (including oil and hazardous materials releases) and spill containment procedures
Florida Department of Transportation - Motor Carrier Compliance Division	Truck accidents (including oil and hazardous materials releases)
Florida Highway Patrol	Truck accidents (including oil and hazardous materials releases)
Florida Marine Patrol	Boating/shipping accidents (including oil and hazardous materials releases) and spill containment procedures
Palm Beach County Airports Department	Aircraft accident statistics and airport safety procedures
Palm Beach International Airport	Aircraft accident statistics and airport safety procedures
Port of Palm Beach Port Authority	Port management, accident statistics, and emergency management procedures
Palm Beach County Sheriff's Department - Marine Unit and Environmental Crimes Unit	Boating/shipping accidents (including oil and hazardous materials releases), spill containment procedures, and environmental crimes statistics
Florida East Coast Railway	Railway accident statistics (including oil and hazardous materials releases), and safety procedures

CSX Rail	Railway accident statistics (including oil and hazardous materials releases), and safety procedures
Palm Beach County Fire Rescue Department and Emergency Medical Services	Accident statistics involving injuries in Palm Beach County
Municipal police and fire departments	Accident statistics involving injuries in the cities
Power/Communications/Computer Gird System Failures	
Florida Power and Light Emergency Management Plans and Historical Database	Historical data and emergency management plans
Bell South Emergency Management Plan and Historical Database	Historical data and emergency management plans
Cellular and Satellite Communication Companies	Historical data and emergency management plans
The Banking Industry (Large Area Network - LANs Protection and Emergency Restoration Plans, as well as historical data on system failures)	Historical data and emergency management plans
Societal Hazards - Hazards arising from disruptions in normal government and community function.	
Civil Disturbance	
Federal Bureau of Investigation Database	Historical data
National Security Council Database	Historical data and risk analysis
Drug Enforcement Agency Database	Historical data
Immigration and Naturalization Service Database	Historical data
U. S. Customs Service	Historical data
U. S. Census Database	Population demographics
Florida Department of Law Enforcement	Historical data and situation plans
Florida Department of Health Education and Welfare	Historical data
Palm Beach County Sheriff's Department	Historical data and situation plans
Municipal Police Departments	Historical data and situation plans
Palm Beach County Fire Rescue Department	Historical data and situation plans
Palm Beach County Public Safety Department, Emergency Medical Services Division	Historical data and situation plans
Terrorism and Sabotage	
Federal Bureau of Investigation Database	Historical data, situation plans, and risk analysis
National Security Council Database	Historical data, situation plans, and risk analysis
Drug Enforcement Agency Database	Historical data

Immigration and Naturalization Service Database	Historical data and preventative measures
U. S. Census Database	Population demographics
Florida Department of Law Enforcement	Historical data, situation plans, and risk analysis
Florida Department of Health Education and Welfare	Population demographics
Palm Beach County Sheriff Department	Historical data, situation plans, and risk analysis
Municipal Police Departments	Historical data, situation plans, and risk analysis
Palm Beach County Fire Rescue Department	Historical data, situation plans, and risk analysis
Palm Beach County Public Safety Department, Emergency Medical Services Division	Historical data on injuries
American Society for Industrial Security	Risk analysis techniques and database
Mass Immigration	
U. S. Coast Guard	Historical data and situation plans
Immigration and Naturalization Service	Historical data, situation plans, and risk analysis
Florida Marine Patrol	Situation plans and interagency coordination
Florida Department of Law Enforcement	Historical data, situation plans, risk analysis, and interagency coordination
Florida Department of Health, Education and Welfare	Population demographics
Palm Beach County Sheriff Department	Historical data, situation plans, risk analysis, and interagency coordination
Municipal Police Departments	Historical data, situation plans, risk analysis, and interagency coordination
Palm Beach County Fire Rescue Department	Situation plans and interagency coordination
Palm Beach County Public Safety Department, Emergency Medical Services Division	Historical data and medical risk analysis
Other Hazards - Crime, Drug Abuse, Economic Crises, Communicable Diseases	
Federal Bureau of Investigation Database	Historical data
National Security Council Database	Historical data
Drug Enforcement Agency Database	Historical data
Immigration and Naturalization Service Database	Historical data
U. S. Census Database	Population demographics
U. S. Public Health Service - Center for Communicable Disease	Disease risk
Florida Department of Law Enforcement	Historical data
Florida Department of Health Education and Welfare	Historical data

Florida Department of Labor	Historical data
Palm Beach County Sheriff Department	Historical data
Municipal Police Departments	Historical data
Palm Beach County Fire Rescue Department	Historical data
Palm Beach County Public Safety Department, Emergency Medical Services Division	Historical data
Palm Beach County Health Department	Historical data

Appendix A- 4: Risk Assessment Hazard Evaluation for Palm Beach County

Hazard Category	Hazard Evaluation				
	Frequency	Vulnerability	Exposure	Risk (Potential for Loss)	
NATURAL HAZARDS					
Flood	Flooding significant enough to damage property has occurred 4 times in the last decade and twice in the last 12 months	Damages resulting from the 1999 flooding totaled $7,823,330 Countywide vulnerability is high, but area specific	Property damage along the coast of Palm Beach County occurs most often in the late winter or early spring and is associated with winter storms and northeasters. Flooding in the inland portions of the county occurs most often in the fall and is often associated with tropical depressions and tropical storms. Incidences of flooding in specific areas of Palm Beach County seem to be on the increase. Flooding exposure for Palm Beach County based on the tropical storm flooding data from the TAOS database is: $373,723,710	Frequency Vulnerability Exposure Risk	HIGH HIGH HIGH HIGH
Hurricane/Tropical storm					
Tropical Storm	Pass within 100 miles of Palm Beach County once or twice every year	High from rain-associated flooding damages; relatively low from wind damage	The major cause of damage associated with tropical storms are heavy rain and flooding. Many communities within Palm Beach County have particularly high vulnerabilities to flooding associated with these storms. Tropical Storm Exposure for Palm Beach County based on the TAOS model is: $647,366,005	Frequency Vulnerability Exposure Risk	HIGH HIGH MODERATE HIGH
Category 1 Hurricane	Pass within 100 miles of Palm Beach County once every 3.1 years	High from rain-associated flooding; moderate from wind damage.	The continental shelf off Palm Beach County is the narrowest along the entire U.S. Atlantic coast. Consequently, Palm Beach County's vulnerability to storm surge from the Atlantic is relatively low. Palm Beach County is, however, extremely vulnerable to storm surge from Lake Okeechobee. Category 1 Hurricane exposure for Palm Beach County based on the TAOS model is: $3,663,876,408	Frequency Vulnerability Exposure Risk	HIGH HIGH HIGH HIGH
Category 2 Hurricane	Pass within 100 miles of Palm Beach County once every 5.3 years	High from rain-associated flooding; significant from wind damage.	Winds in category 2 storms range from 96 to 110 mph. Significant damage is possible in older wood frame residential construction. Category 2 hurricane exposure for Palm Beach County based on the TAOS model is: $10,587,319,465	Frequency Vulnerability Exposure Risk	HIGH HIGH HIGH HIGH
Category 3 Hurricane	Pass within 100 miles of Palm Beach County once every 11.5 years	Very high from rain-associated flooding coupled with storm surge; major from wind damage.	Winds in category 3 storms range from 111 to 130 mph. These winds can do major damage to most residential construction. Category 3 Hurricane exposure for Palm Beach County based on the TAOS model is: $25,072,808,943	Frequency Vulnerability Exposure Risk	MODERATE HIGH HIGH HIGH

Hazard Category	Hazard Evaluation				
	Frequency	Vulnerability	Exposure	Risk (Potential for Loss)	
Category 4 Hurricane	Pass within 100 miles of Palm Beach County once every 202 years	Very high from rain-associated flooding coupled with storm surge; massive from wind damage	Sustained winds in a category 4 hurricane range from 131 to 155 mph. There are very few commercial structures in Palm Beach County engineered to withstand such winds. Category 4 hurricane exposure for Palm Beach County based on the TAOS model is: $52,040,209,850	Frequency	LOW
				Vulnerability	HIGH
				Exposure	HIGH
				Risk	MODERATE
Category 5 Hurricane	Pass within 100 miles of Palm Beach County once every 1,500 years	High from rain-associated flooding; catastrophic in terms of wind damage.	Sustained winds in a category 5 hurricane range upward from 155 mph. Very few structures can withstand these winds. Massive flooding may occur in the western part of the county resulting from the storm surge in Lake Okeechobee. Category 5 Hurricane exposure for Palm Beach County based on the TAOS model is: $101,344,978,155	Frequency	VERY LOW
				Vulnerability	HIGH
				Exposure	HIGH
				Risk	LOW
Tornado	Between 1950 and 1998 there were 135 tornadoes, waterspouts, and funnel clouds reported within Palm Beach County. Of these, 91 touched down on land and were officially classified as tornadoes (1.90 tornadoes per year). In tornado prone Southeast Florida, the odds of a tornado striking any specific location are once every 250 years.	During the 48 years from 1950 to 1998, 73 people were killed by tornadoes (1.52 deaths per year). Total property damage by tornadoes over this same time period has been estimated at $21 million or approximately $440,000 per year.	Tornadoes are rated from 0 to 5 based on their path length and mean width (Fujita-Pearson Scale). F0 tornadoes cause light damage and F5 tornadoes cause incredible or catastrophic damage. Of the 91 tornadoes recorded in Palm Beach County between 1950 and 1998, 54 were classified as F0 (59%), 28 (31%) were classified F1, 8 (9%) were classified as F2, and 1 (1%) was classified as an F3 tornado.	Frequency	MODERATE
				Vulnerability	LOW
				Exposure	LOW
				Risk	LOW
Severe Thunderstorm/Lightning	Between May 1996 and July 1997, 22 severe thunderstorms were reported in Palm Beach County (1.69 per month).	These storms resulted in 1 fatality and 18 injuries (from lightning), and a total of $50,000 in reported property damage (also from lightning). This represents an average of $3,846 in damages per month.	Thunderstorms with strong wind, down bursts, hail, and lightning are very common on Florida=s southeast coast. Property losses due to lightning are poorly documented. Based on statewide insurance claims, it is estimated that the actual property damage from lightning is close to $390,000 or $32,500 per month.	Frequency	HIGH
				Vulnerability	MODERATE
				Exposure	MODERATE
				Risk	MODERATE
Drought	Every year, some portion of the U.S. endures drought conditions. Florida has recently experienced drought conditions annually in the spring and summer.	Palm Beach County's most direct exposure to drought is the economic loss endured by its agricultural community. The average annual market value of agricultural products from Palm Beach County is approximately $900 million. In addition to this direct impact, Palm Beach County is also particularly vulnerable in terms of potable water resources. Countywide potable water reserves are not extensive, and drought increases salt water contamination of critical well fields.	Palm Beach County's vulnerability to drought related damage and economic loss can occur in many areas. Direct impacts include reduced crop yield, increased fire hazard, reduced water levels, increased livestock and wildlife mortality rates, and damage to wildlife and fishery habitat. Social impacts include public safety, health, conflicts between water users, and general reduction in the quality of life.	Frequency	HIGH
				Vulnerability	HIGH
				Exposure	MODERATE
				Risk	MODERATE

Hazard Category	Hazard Evaluation				
	Frequency	Vulnerability	Exposure	Risk (Potential for Loss)	
Temperature Extremes	Between 1970 and 1999, 7 significant freezes have affected Palm Beach County. Prolonged periods of extremely high temperatures are relatively rare in Palm Beach County; however, due to the consistently high humidity the local Aheat index@ is often significantly above the actual temperature during the summer months.	Palm Beach County as a whole has a high economic vulnerability to freezing temperatures. The most significant area of impact is the commercial agricultural segment of the community, but countywide, cold-sensitive ornamental landscaping also leaves many entities, public and private, open for significant economic loss. While the frequency of "heat waves" is low, the frequency of heat indexes within the range of causing health problems is moderate to high during the summer months.	While the loss of life from either extreme low or high temperatures in Palm Beach County is not great compared to national statistics, the county does have a significant economic exposure to low temperatures in both the public and private sectors.	Frequency Vulnerability Exposure Risk	LOW MODERATE MODERATE MODERATE
Tsunamis	There has never been a tsunami to affect Palm Beach County.	The vulnerability is high since Palm Beach County has a vast coast line however the probability of one occurring is low.	Exposure is high if one were to occur since Palm Beach County has a vast coast line with most of the population concentrate along the coast	Frequency Vulnerability Exposure Risk	LOW MODERATE MODERATE LOW
Agricultural Pests and Disease	The most significant agricultural pests and diseases affecting Palm Beach County are as follows: $ Citrus canker; $ Mediterranean fruit fly; $ Sugarcane pest; and $ Tomato Yellow Leaf Curl Virus. These pests are a constant problem for the agricultural community.	Palm Beach County is highly vulnerable to agricultural diseases and pests due to its location and the importation of agricultural products through its port. Mitigation for these types of agricultural pests largely involves public and private participation and works best when a county or region-wide approach is used.	Exposure to these pests is high in terms of the county's agricultural community.	Frequency Vulnerability Exposure Risk	MODERATE HIGH HIGH MODERATE
Wildfire/Urban Interface Zone	Wildfires have become a common annual occurrence in wooded areas during Florida's dry season.	Wildfire is a significant and frequent hazard in specific areas of Palm Beach County. Vulnerability varies extensively with location.	Exposure to wildfire varies greatly across Palm Beach County. While exposure is relatively low along the county's urbanized coastline, it is quite high in some of the landlocked communities. Mitigation projects addressing this issue need to be evaluated on a case by case basis.	Frequency Vulnerability Exposure Risk	MODERATE MODERATE LOW (Countywide) MODERATE
Muck Fires	Muck fires are not a frequent threat to Palm Beach County. They occur during periods of extreme drought, when the swamp muck becomes dried out and is ignited. Once ignited, these fires burn deep within the muck and are extremely difficult to extinguish.	Communities and areas with the highest exposure to this hazard are on the western side of the county.	There have been no significant muck fires in Palm Beach County in the last 30 years and this hazard is considered to be a limited danger. There were significant muck fires in the everglades in the 1980's. Because the fires are so difficult to extinguish, they become significant air quality problems. Specific mitigation projects must be evaluated based on location and potential danger.	Frequency Vulnerability Exposure Risk	LOW LOW LOW LOW

Hazard Category	Hazard Evaluation				
	Frequency	Vulnerability	Exposure	Risk (Potential for Loss)	
Soil/Beach Erosion	Beach erosion constantly occurs along Palm Beach County's coastline. In some areas, specific structures are threatened. Other specific sites where erosion is a persistent problem are along stormwater drainage points into the Intra-Coastal Waterway and along canals.	All the coastal communities have high vulnerability relative to beach erosion. Beach erosion problems require public and private cooperation to address. Potential long term mitigation will focus on overall sand budgets and sand transport rates. Mitigation projects in this area should be evaluated carefully by experienced coastal engineers. The erosion vulnerability is associated with stormwater outfalls and canals is limited and site-specific in nature.	Some specific locations have a higher "immediate exposure" than others. Stormwater drainage outfall and canal bank stabilization projects should be evaluated based on site specifics.	Frequency	HIGH
				Vulnerability	MODERATE
				Exposure	LOW
Seismic Hazards (sinkhole; soil failure)	Sinkholes are not considered to be a significant hazard in Palm Beach County. Soil failure or collapse is rare in Palm Beach County and is generally related to some other natural hazard, such as dam or levee failure during a period of flooding.	Countrywide vulnerability to this type of hazard is low, however areas that might be affected by dam or levee failure need to be evaluated carefully. The most significant levee in the county is the dyke around Lake Okeechobee.	Overall, the frequency and community exposure to these type hazards is low other than in specific locations and under specific circumstances. There is a significant exposure of life and property in the western portion of the county should storm surge breach the Okeechobee dyke.	Frequency	LOW
				Vulnerability	MODERATE
				Exposure	MODERATE
				Risk	MODERATE
TECHNOLOGICAL					
Hazardous Materials Accident	The frequency with which hazardous materials incidents occur in Palm Beach County is relatively high when compared to other counties located along the major Florida east coast transportation corridor. Minor spills occur with a moderate frequency.	Countywide, Palm Beach County has a moderate vulnerability with respect to hazardous materials releases. Some areas such as the City of West Palm Beach have a high vulnerability to this hazard due to specific circumstances.	Countywide, the exposure relative to a site specific hazardous materials releases is low.	Frequency	MODERATE
				Vulnerability	MODERATE
				Exposure	LOW
				Risk	MODERATE
Radiological Accidents (including nuclear power plant accidents)	To date, the frequency of radiological accidents and releases has been very low.	Palm Beach County is moderately vulnerable to radiological accidents due to its location with respect to the St. Lucie Nuclear Power Plant.	Countywide, the exposure to a nuclear power plant accident must be considered moderate and exposure to other types of radioactive materials releases is considered low.	Frequency	VERY LOW
				Vulnerability	MODERATE
				Exposure	MODERATE
				Risk	LOW
Communications Failure	Major communications failures have occurred infrequently in Palm Beach County to date.	Palm Beach County is a center of business and commerce along Florida's east coast. As such, it has a higher than average vulnerability to communication system break down.	Palm Beach County=s exposure in the event of a major communication system failure is relatively high due to the major banking, finance, and governmental centers located here.	Frequency	LOW
				Vulnerability	MODERATE

Hazard Category	Hazard Evaluation				
	Frequency	Vulnerability	Exposure	Risk (Potential for Loss)	
				Exposure	HIGH
				Risk	MODERATE
Hazardous Material Release	Palm Beach County has over 1,100 reported (Section 302) hazardous material sites, most of which are located in urban areas. To date, the frequency of releases from these facilities has been low compared to the number of releases from transportation accidents.	Due to the number and location of hazardous material sites within the community, Palm Beach County must be considered to have a moderate vulnerability with respect to this hazard.	Countywide exposure in terms of life and property from toxic material release is considered moderate to high.	Frequency	LOW
				Vulnerability	MODERATE
				Exposure	MODERATE
				Risk	MODERATE
Transportation System Accidents	Palm Beach County has major rail lines, north-south highway corridors, an international port, and an international airport. Minor transportation accidents occur quite frequently. Major transportation accidents such as rail and plane crashes are less frequent.	Due to this concentration of transportation industries and activities throughout Palm Beach County, the county has a high vulnerability to transportation system accidents.	Low countywide, but high in specific areas.	Frequency	LOW
				Vulnerability	HIGH
				Exposure	LOW (Countywide)
				Risk	MODERATE
Wellfield Contamination	There have been incidences of wellfield contamination in Palm Beach County and the County maintains a program designed to monitor this risk.	The eastern part of the county along the coastline is particularly vulnerable to this hazard. This is the area with the greatest population and the most industrialization. During times of drought, this area is also vulnerable to wellfield contamination from salt water intrusion.	Exposure in terms of property value is high with regard to this hazard.	Frequency	LOW
				Vulnerability	HIGH
				Exposure	HIGH
				Risk	MODERATE
Power Failure (outages)	Business and industry in Palm Beach County are regularly affected by power fluctuation and short term power outages. Major, long term outages are rare.	All modern societies are highly vulnerable to prolonged power failures. Even power failures of 12 to 24 hours would have significant impacts on both the county's economy and on human health and safety.	Short term power loss has a significant, but hard to quantify economic impact in terms of equipment damage and lost productivity. Prolonged power failures lasting days or weeks would be a major disaster for Palm Beach County, both economically and in terms of human health and safety.	Frequency	LOW (For major power disruptions)
				Vulnerability	HIGH
				Exposure	HIGH
				Risk	MODERATE
Civil Disturbance	There have been significant civil disturbances in Palm Beach County. Minor civil disturbances occur with moderate frequency in specific jurisdictions.	Overall vulnerability to civil disturbance in Palm Beach County is low, however there are several specific areas and jurisdictions which are moderately, if not highly vulnerable to this hazard.	Exposure in terms of dollars to the effects of civil disturbances must be considered low within the overall perspective of the county. Exposure in terms of human health and safety is moderate.	Frequency	LOW
				Vulnerability	LOW (Countywide)
				Exposure	MODERATE
				Risk	LOW

Hazard Category	Hazard Evaluation				
	Frequency	Vulnerability	Exposure	Risk (Potential for Loss)	
Terrorism and Sabotage	Other than random "hate crimes," there have never been any significant acts of terrorism or sabotage in Palm Beach County.	Palm Beach County has two areas of vulnerability with respect to this hazard. These are: ! Celebrity Terrorism potentially directed at some of its wealthy and internationally known residents. In this area Palm Beach County is more vulnerable than many places in the United States just because of the nature of its population; and ! Target specific terrorism directed against specific government buildings and businesses. As a seat of government in an industrialized county, Palm Beach's vulnerability here is higher than some rural Florida counties, but no more that any other center of business and industry in modern America.	Palm Beach County's exposure to this hazard is greater than some other areas, but overall must be considered only moderate. There are many other areas offering equally attractive targets in the U.S., and there are several climatological, geographic, and infrastructure aspects to Palm Beach County which reduce its attractiveness to large scale acts of terrorism. The warm temperatures, onshore winds, high rates of sunlight (UV exposure), and rainfall in Palm Beach County make this area a less favorable target for biological or chemical terrorism than many other areas of the United States. The population here is dispersed when compared to major cities in the northeastern U.S., and the transportation system infrastructure is highly dependent upon individual vehicles. Both of these features make Palm Beach County a less desirable target for transportation system or conventional type (bomb related) terrorist acts.	Frequency Vulnerability Exposure Risk	LOW MODERATE LOW MODERATE TO LOW
Immigration Crisis	Illegal immigration has and continues to impact Palm Beach County. While major immigration crises are rare, Palm Beach County has been affected by most of those that have occurred.	Because of its demographics and large agricultural industry, Palm Beach County has a high vulnerability to immigration crisis arising from anywhere in the Caribbean, Latin America, or South America.	Exposure in terms of dollars from an immigration crisis would result mainly from the stress on local police and health services. Exposure in terms of human health and safety would result from the possible introduction of diseases and stress on the existing health care network.	Frequency Vulnerability Exposure Risk	MODERATE (Over the last decade) HIGH MODERATE MODERATE

Table A-4 (a): Risk Assessment by Hazard and Jurisdiction

Hazard Category **Vulnerability Rating** H: High M: Medium L: Low	Unincorporated County	MUNICIPALITIES																																				
		Atlantis, City of	Belle Glade, City of	Boca Raton, City of	Boynton Beach, City of	Briny Breezes, Town of	Cloud Lake, Town of	Delray Beach, City of	Glen Ridge, Town of	Golf, Village of	Greenacres, City of	Gulf Stream, Town of	Haverhill, Town of	Highland Beach, Town of	Hypoluxo, Town of	Juno Beach, Town of	Jupiter, Town of	Jupiter Inlet Colony, Town of	Lake Clarke Shores, Town of	Lake Park, Town of	Lake Worth, City of	Lantana, Town of	Loxahatchee Groves	Manalapan, Town of	Mangonia Park, Town of	North Palm Beach, Village of	Ocean Ridge, Town of	Pahokee, City of	Palm Beach, Town of	Palm Beach Gardens, City of	Palm Beach Shores, Town of	Palm Springs, Village of	Riviera Beach, City of	Royal Palm Beach, Village of	South Bay, City of	South Palm Beach, City of	Tequesta, Village of	Wellington, Village of	West Palm Beach, City of
NATURAL HAZARDS																																						
Flood																																						
Frequency	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	H	H
Vulnerability	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	H	H
Exposure	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	H	H
Risk	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	H	H
Hurricane/Tropical Storm																																						
Frequency	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	H	H
Vulnerability	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	H	H
Exposure	M	H	M	H	H	H	H	H	H	H	M	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	H	H	H	H	H	M	M	H	M	M	H
Risk	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	H	H
Tornado																																						
Frequency	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	L	M	M	M	M	M	M
Vulnerability	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	L
Exposure	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Risk	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Thunderstorm/Lightning																																						
Frequency	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H

Hazard Category **Vulnerability Rating** H: High M: Medium L: Low		MUNICIPALITIES																																				
	Unincorporated County	Atlantis, City of	Belle Glade, City of	Boca Raton, City of	Boynton Beach, City of	Briny Breezes, Town of	Cloud Lake, Town of	Delray Beach, City of	Glen Ridge, Town of	Golf, Village of	Greenacres, City of	Gulf Stream, Town of	Haverhill, Town of	Highland Beach, Town of	Hypoluxo, Town of	Juno Beach, Town of	Jupiter, Town of	Jupiter Inlet Colony, Town of	Lake Clarke Shores, Town of	Lake Park, Town of	Lake Worth, City of	Lantana, Town of	Loxahatchee Groves	Manalapan, Town of	Mangonia Park, Town of	North Palm Beach, Village of	Ocean Ridge, Town of	Pahokee, City of	Palm Beach, Town of	Palm Beach Gardens, City of	Palm Beach Shores, Town of	Palm Springs, Village of	Riviera Beach, City of	Royal Palm Beach, Village of	South Bay, City of	South Palm Beach, City of	Tequesta, Village of	Wellington, Village of	West Palm Beach, City of
Vulnerability	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Exposure	M	M	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	H	M	M	M	M	M	H	H	M	M	H	M
Risk	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Drought																																						
Frequency	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	H	H
Vulnerability	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	M	H	H	H	H	M	H	H
Exposure	M	M	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	H	M	M	M	M	M	H	H	M	M	M	M
Risk	M	M	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	H	M	M	M	M	M	H	H	M	M	M	M
Temperature Extremes																																						
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Vulnerability	M	M	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	H	M	M	M	M	M	M	H	M	L	M	M
Exposure	M	M	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	H	M	M	M	M	M	M	H	M	L	M	M
Risk	M	M	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	H	M	M	M	M	M	M	H	M	L	M	M
Tsunamis																																						
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Vulnerability	M	M	L	H	H	H	M	H	M	L	L	H	L	H	M	H	H	H	M	H	H	M	L	H	M	H	H	L	H	M	H	L	H	L	L	H	L	L	H
Exposure	M	M	L	H	H	H	M	H	M	L	L	H	L	H	M	H	H	H	M	H	H	M	L	H	M	H	H	L	H	M	H	L	L	L	L	H	M	L	H
Risk	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Agricultural Pests/Diseases																																						
Frequency	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	L	M	M	M	L	M	M

Hazard Category **Vulnerability Rating** H: High M: Medium L: Low	Unincorporated County	MUNICIPALITIES																																				
		Atlantis, City of	Belle Glade, City of	Boca Raton, City of	Boynton Beach, City of	Briny Breezes, Town of	Cloud Lake, Town of	Delray Beach, City of	Glen Ridge, Town of	Golf, Village of	Greenacres, City of	Gulf Stream, Town of	Haverhill, Town of	Highland Beach, Town of	Hypoluxo, Town of	Juno Beach, Town of	Jupiter, Town of	Jupiter Inlet Colony, Town of	Lake Clarke Shores, Town of	Lake Park, Town of	Lake Worth, City of	Lantana, Town of	Loxahatchee Groves	Manalapan, Town of	Mangonia Park, Town of	North Palm Beach, Village of	Ocean Ridge, Town of	Pahokee, City of	Palm Beach, Town of	Palm Beach Gardens, City of	Palm Beach Shores, Town of	Palm Springs, Village of	Riviera Beach, City of	Royal Palm Beach, Village of	South Bay, City of	South Palm Beach, City of	Tequesta, Village of	Wellington, Village of	West Palm Beach, City of
Vulnerability	H	M	H	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	H	M	M	M	L	M	M	M	H	M	M	M
Exposure	H	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	H	L	L	L	L	L	L	H	L	L	L	L
Risk	M	L	H	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	H	L	L	L	L	L	L	H	L	L	L	L
Wildfire/Urban Interface																																						
Frequency	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	M	L	L	L	L	L	L	M	L	L	L	M	L	L	L	M	L
Vulnerability	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	M	L	L	L	L	L	L	M	L	L	L	M	L	L	L	M	L
Exposure	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Risk	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	M	L	L	L	L	L	L	M	L	L	L	M	L	L	L	M	L
Muck Fires																																						
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Vulnerability	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Exposure	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Risk	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Soil /Beach Erosion																																						
Frequency	L	L	L	M	M	L	L	L	M	L	L	L	L	M	L	M	M	L	L	M	M	L	L	M	L	M	M	L	M	L	M	L	M	L	L	L	M	L	L
Vulnerability	L	L	L	H	H	L	L	L	H	L	L	L	L	H	L	H	H	L	L	H	H	L	L	H	L	H	H	L	H	L	H	L	H	L	L	L	H	L	L
Exposure	L	L	L	M	M	L	L	L	M	L	L	L	L	M	L	H	H	L	L	H	H	L	L	H	L	H	H	L	H	L	H	L	H	L	L	L	H	L	L
Risk	L	L	L	M	M	L	L	L	M	L	L	L	L	M	L	M	M	L	L	M	M	L	L	M	L	M	M	L	M	L	M	L	M	L	L	L	M	L	L
Seismic Hazards																																						
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L

Hazard Category **Vulnerability Rating** H: High M: Medium L: Low	Unincorporated County	MUNICIPALITIES																																				
		Atlantis, City of	Belle Glade, City of	Boca Raton, City of	Boynton Beach, City of	Briny Breezes, Town of	Cloud Lake, Town of	Delray Beach, City of	Glen Ridge, Town of	Golf, Village of	Greenacres, City of	Gulf Stream, Town of	Haverhill, Town of	Highland Beach, Town of	Hypoluxo, Town of	Juno Beach, Town of	Jupiter, Town of	Jupiter Inlet Colony, Town of	Lake Clarke Shores, Town of	Lake Park, Town of	Lake Worth, City of	Lantana, Town of	Loxahatchee Groves	Manalapan, Town of	Mangonia Park, Town of	North Palm Beach, Village of	Ocean Ridge, Town of	Pahokee, City of	Palm Beach, Town of	Palm Beach Gardens, City of	Palm Beach Shores, Town of	Palm Springs, Village of	Riviera Beach, City of	Royal Palm Beach, Village of	South Bay, City of	South Palm Beach, City of	Tequesta, Village of	Wellington, Village of	West Palm Beach, City of
Vulnerability	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Exposure	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Risk	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
TECHNOLOGICAL HAZARDS																																						
Hazardous Materials Accident																																						
Frequency	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Vulnerability	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Exposure	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Risk	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Radiological Accidents																																						
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Vulnerability	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Exposure	M	L	L	L	L	L	L	L	L	L	L	L	M	L	L	M	M	M	M	L	M	L	L	L	L	M	L	L	M	M	M	L	M	L	L	L	L	M
Risk	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Communications Failure																																						
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Vulnerability	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	L	M	M	M	M	M	M
Exposure	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	L	M	M	M	M	M	M
Risk	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	L	M	M	M	M	M	M

Hazard Category Rating H: High M:Medium L: Low	Unincorporated County	MUNICIPALITIES																																				
		Atlantis, City of	Belle Glade, City of	Boca Raton, City of	Boynton Beach, City of	Briny Breezes, Town of	Cloud Lake, Town of	Delray Beach, City of	Glen Ridge, Town of	Golf, Village of	Greenacres, City of	Gulf Stream, Town of	Haverhill, Town of	Highland Beach, Town of	Hypoluxo, Town of	Juno Beach, Town of	Jupiter, Town of	Jupiter Inlet Colony, Town of	Lake Clarke Shores, Town of	Lake Park, Town of	Lake Worth, City of	Lantana, Town of	Loxahatchee Groves	Manalapan, Town of	Mangonia Park, Town of	North Palm Beach, Village of	Ocean Ridge, Town of	Pahokee, City of	Palm Beach, Town of	Palm Beach Gardens, City of	Palm Beach Shores, Town of	Palm Springs, Village of	Riviera Beach, City of	Royal Palm Beach, Village of	South Bay, City of	South Palm Beach, City of	Tequesta, Village of	Wellington, Village of	West Palm Beach, City of
Hazardous Material Release																																						
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Vulnerability	M	M	M	M	M	L	M	M	M	M	M	L	M	L	M	L	M	M	M	M	M	M	L	L	M	M	L	M	L	M	M	M	M	M	M	L	L	M	M
Exposure	M	M	M	M	M	L	M	M	M	M	M	L	M	L	M	L	M	M	M	M	M	M	L	L	M	M	L	M	L	M	M	M	M	M	M	L	L	M	M
Risk	M	M	M	M	M	L	M	M	M	M	M	L	M	L	M	L	M	M	M	M	M	M	L	L	M	M	L	M	L	M	M	M	M	M	M	L	L	M	M
Transportation Accident																																						
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L
Vulnerability	M	L	M	M	M	L	L	M	M	L	L	L	M	L	M	L	M	L	L	M	M	M	M	L	M	L	L	M	L	M	L	L	M	L	M	L	M	L	M
Exposure	M	L	M	M	M	L	L	M	M	L	L	L	M	L	M	L	M	L	L	M	M	M	L	L	M	L	L	M	L	M	L	L	M	L	M	L	M	L	M
Risk	M	L	M	M	M	L	L	M	M	L	L	L	M	L	M	L	M	L	L	M	M	M	M	L	M	L	L	M	L	M	L	L	M	L	M	L	M	L	M
Wellfield Contamination																																						
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L
Vulnerability	M	L	L	M	M	L	L	M	L	L	L	M	L	L	L	L	M	L	L	M	L	L	M	L	M	L	L	L	L	M	L	L	L	L	L	L	M	M
Exposure	M	L	L	M	M	L	L	M	L	L	L	M	L	L	L	L	M	L	L	M	L	L	M	L	M	L	L	L	L	M	L	L	L	L	L	L	M	M
Risk	M	L	L	M	M	L	L	M	L	L	L	M	L	L	L	L	M	L	L	M	L	L	M	L	M	L	L	L	L	M	L	L	L	L	L	L	M	M
Power Failure (Outages)																																						
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	L	L	L	L	M	L	L	L	L	L	L
Vulnerability	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
Exposure	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

Hazard Category **Vulnerability Rating** H: High M: Medium L: Low		MUNICIPALITIES																																				
	Unincorporated County	Atlantis, City of	Belle Glade, City of	Boca Raton, City of	Boynton Beach, City of	Briny Breezes, Town of	Cloud Lake, Town of	Delray Beach, City of	Glen Ridge, Town of	Golf, Village of	Greenacres, City of	Gulf Stream, Town of	Haverhill, Town of	Highland Beach, Town of	Hypoluxo, Town of	Juno Beach, Town of	Jupiter, Town of	Jupiter Inlet Colony, Town of	Lake Clarke Shores, Town of	Lake Park, Town of	Lake Worth, City of	Lantana, Town of	Loxahatchee Groves	Manalapan, Town of	Mangonia Park, Town of	North Palm Beach, Village of	Ocean Ridge, Town of	Pahokee, City of	Palm Beach, Town of	Palm Beach Gardens, City of	Palm Beach Shores, Town of	Palm Springs, Village of	Riviera Beach, City of	Royal Palm Beach, Village of	South Bay, City of	South Palm Beach, City of	Tequesta, Village of	Wellington, Village of	West Palm Beach, City of
Risk	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M

SOCIETAL HAZARDS																																							
Civil Disturbance																																								
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Vulnerability	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Exposure	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Risk	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Terrorism and Sabotage																																							
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Vulnerability	M	L	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	M	M	L	L	M	L	M	L	L	L	M
Exposure	M	L	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	M	M	L	L	M	L	M	L	L	L	M
Risk	M	L	M	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	M	M	L	L	M	L	M	L	L	L	M
Immigration Crisis																																							
Frequency	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
Vulnerability	M	L	M	L	M	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	M	L	M	L	M	L	L	L	M
Exposure	M	L	M	L	M	L	L	M	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	M	L	L	M	L	M	L	M	L	L	L	M
Risk	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L

Table A-5: Impact Analysis

With the assistance of Palm Beach County Division of Emergency Management, the LMS conducted impact analyses to assess the potential for detrimental impacts from all identified natural, technological and societal hazards. Results of these analyses are summarized below. Impacts were categorized into the following groupings: health and safety of the resident population in the affected area; health and safety of incident responders; impacts on the continuity of government and non-government operations; impacts to property, facilities and infrastructure; impacts to the critical community services; impacts to the environment; economic and financial impacts; impacts on regulatory and contractual obligations; and impacts negatively affecting the county's reputation, image, and/or ability to attract public and commercial interests.

An impact rating of "Low" for any hazard type means the hazard is not likely to have any measurable or lasting detrimental impact of a particular type and consequences will likely be rectified promptly with locally available resources. An impact rating of "Medium" means there will likely be a measurable detrimental impact which may require some time to rectify and may require outside resources and/or assistance.

An impact rating of "High" means the impact will likely be severe and of longer duration, and require substantial time, resources, and/or outside assistance to rectify. Multiple ratings indicate detrimental impacts might easily vary within the range indicated.

Table A-5: Impact Analysis

Potential Detrimental Impacts

Hazard	Health & Safety Residents	Health & Safety Responders	Continuity of Operations	Property, Facilities Infra-structure	Historical Resources	Delivery of Services	Environ-ment	Economic & Financial Conditions	Regulatory Contractual Obligations	Reputation of County
Natural										
Flood	Medium	Medium	Low	Medium	Medium/	Medium	Medium	Medium	Low	Low
Tropical Storm	Medium	Medium	Low	Medium	Medium	Medium	Medium	Medium	Low	Low
Hurricane Cat 1	Medium	Medium	Low	Medium	Medium	Medium	Medium	Medium	Low	Low
Hurricane Cat 2	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Low	Low
Hurricane Cat 3	Medium/ High	Medium/ High	Medium/ High	Medium/ High	Medium/ High	Medium/ High	High	Medium/ High	Medium	Low/ Medium
Hurricane Cat 4	High	High	High	High	High	High	High	High	High	Medium/ High
Hurricane Cat 5	High	High	High	High	High	High	High	High	High	Medium/ High
Tornado	Low/ Medium	Medium	Low	Low/ Medium	Low/High	Low	Low/ Medium	Medium	Low	Low
Severe Thunder Storm/Lightning	Low	Low	Low	Low	Low/ Medium	Low	Low	Low	Low	Low
Drought	Low	Low	Low	Low	Low	Low	Low/ Medium	Medium/ High	Low	Low
Temp. Extremes	Low/ Medium	Low	Low	Low	Low	Low	Low/ Medium	Medium	Low	Low
Agricultural Pest/Disease	Low	Low	Low	Low	Low	Low	Low/ Medium	Medium/ High	Low	Low/ Medium
Wildfire/Urban Interface Zone	Low/ Medium	Medium/ High	Low	Medium/ High	Low	Low	Low/ Medium	Medium/ High	Low	Low
Muck Fires	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Soil/Beach Erosion	Low	Low	Low	Low/ Medium	Low/High	Low	Medium/ High	Medium/ High	Low	Low/ Medium
Seismic Hazards (Sinkhole, soil failure)	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low

Hazard	Health & Safety Residents	Health & Safety Responders	Continuity of Operations	Property, Facilities Infra-structure	Historical Resources	Delivery of Services	Environ-ment	Economic & Financial Conditions	Regulatory Contractual Obligations	Reputation of County
Technological										
Hazardous Materials Accident	Medium/ High	Medium/ High	Low/ Medium	Low	Low	Low	Medium/ High	Low/ Medium	Low	Low
Radiological Accidents	Low/ Medium	Low/ Medium	Low	Low	Low	Low	Low/ Medium	Low/ Financial	Low	Low/ Medium
Communication Failure	Medium	Medium	Medium/ High	Low	Low	Medium/ High	Low	Medium/ High	Low	Low
Hazardous Material Release	Medium/ High	Medium/ High	Low/ Medium	Low	Low	Low	Medium/ High	Low/High	Medium	Low/ Medium
Transportation Accidents	Low/High	Low/High	Low/High	Low/High	Low	Low/ Medium	Low	Low/High	Low	Low/ Medium
Wellfield Contamination	Low/ Medium	Low	Low	Low/ Medium	Low	Low/ Medium	Medium/ High	Low/ Medium	Low	Low
Power Failure (Outage)	Medium/ High	Medium/ High	Medium/ High	Low/ Medium	Low	Medium/ High	Low	Medium/ High	Low	Low/ Medium
Societal										
Civil Disturbance	Low/High	Low/High	Low/High	Low/High	Low	Low/High	Low	Low/High	Low	Low/High
Terrorism & Sabotage	Medium/ High	High	Medium/ High	Low/High	Low	Medium/ High	Low/High	Low/High	Low/ Medium	Medium/ High
Immigration Crisis	Low/ Medium	Low/ Medium	Low	Low	Low	Low	Low	Low/ Medium	Low	Low/ Medium

Appendix B: Countywide Mitigation Initiatives

Appendix B provides a description of representative mitigation programs and initiatives undertaken by Palm Beach County and its jurisdictions and the principles guiding intergovernmental coordination. These programs and initiatives served as the basis for the mitigation projects outlined in Appendix E. This appendix includes:

Section B-1 Mitigation Initiatives of Palm Beach County; and

Section B-2 Jurisdictional Initiatives within Palm Beach County, and

Section B-3 Intergovernmental Coordination

Section B-4 Private Sector Coordination

This section addresses the following FEMA requirements:

Requirement §201. 6(c)(3)(i): The hazard mitigation strategy *shall* include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Requirement §201.6(c)(3)(ii): The mitigation strategy *shall* include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. The mitigation strategy must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

Requirement: §201.6(c)(3)(iii): The mitigation strategy section *shall* include an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization *shall* include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Appendix B-1: Palm Beach County Initiatives

Palm Beach County and its 38 municipalities participate in a full range of federal, state and local mitigation programs and initiatives. Representative of these programs and initiatives are the Unified Local Mitigation Strategy (LMS), Community Rating System (CRS), National Flood Insurance Program (NFIP), Flood Mitigation Assistance Program (FMA), Pre-Disaster Mitigation Program (PDM), Hazard Mitigation Grant program (HMGP), Emergency Management & Assistance Program (EMPA), CERT, Continuity of Operations, Post Disaster Redevelopment Planning (PDRP), ESF18, Private-Public Partnership, counter-terrorism, radiological emergency preparedness initiatives, hazardous materials, etc. The overarching purpose of these activities is the elimination or mitigation of hazards presenting significant risk to the county and its residents. At this writing, Palm Beach County is involved in a detailed self-assessment and upgrade (as necessary), of its mitigation programs and activities in the context of the jurisdiction's overall Emergency Management program as part of its efforts to meet or exceed the national standards required to become accredited under the Emergency Management Accreditation Program (EMAP). The county hopes to be among the first Florida communities fully accredited under EMAP.

The Unified Local Mitigation Strategy program and its companion mitigation programs are described in greater detail in Section 4.1.4.

A major mitigation priority of the LMS is the reduction of repetitive flood losses to properties. The county and its CRS participating municipalities track repetitive loss properties countywide on an ongoing basis using data gathered annually from FEMA and the State's Focus reports. For mitigation planning and strategy development purposes, LMS maintains updated GIS maps and informational databases of repetitive loss property locations relative to historical flood areas and designated Special Flood Hazard Areas. Repetitive loss properties are an ongoing discussion and planning priority for the LMS, CRS, and Flood Mitigation Technical Advisory committees. These committees, comprised of public and private sector representatives, are encouraged to develop and promote mitigation project ideas and strategies. At this writing, approximately 40 flood mitigation projects were in various stages of execution or on the drawing board of the Technical Advisory Committee.

In accordance with CRS guidelines, letters are mailed annually to repetitive loss property owners by the county and municipalities explaining NFIP program benefits, the availability of mitigation assistance funding through the Flood Mitigation Assistance program and other mitigation assistance programs. Non CRS members of the LMS are encouraged to stay in compliance with NFIP standards. A summary of NIP practices by jurisdiction are presented in Special Appendix III.

Information and support is provided in a variety of forms to potential FMA applicants to assist them in developing projects and preparing application packages. Through the county's new LMS committee structure, the Technical Advisory Committee is available to offer technical guidance and assistance to applicants, including assistance in preparing benefit-cost analyses.

Mitigation projects are prioritized and implemented according to their direct potential for loss reduction or for their potential in contributing to longer-term, comprehensive plans

and strategies for loss reduction. Once projects are underway, it is the responsibility of each jurisdiction to support and monitor performance in accordance with FEMA, state and local guidelines and codes and to oversee and coordinate documentation and funding processes.

In addition to support of projects, mitigation is encouraged and promoted through a variety of community awareness and education activities including presentations, workshops, expos, panel discussions, plan reviews, publications, websites, etc. prepared and presented utilizing networks of public-private sector partners. As opportunities present themselves, lending institutions and insurers are urged to provide financial incentives for mitigation. Jurisdictions are urged to accelerate permitting and inspections and, if allowable, to waive or reduce fees for mitigation projects. In addition to mitigation incentives, millions of dollars of annual insurance premium savings are realized by a significant segment of county residents residing within the county's CRS participating jurisdictions.

Involvement of Planning, Zoning, Building, Fire-Rescue and other departments in LMS activities, including committee participation, bolsters communication among key agencies and the LMS and ensures that mitigation interests are appropriately represented in local building codes, fire codes, land-use ordinances, flood loss prevention ordinances, and other governing documentation.

The Palm Beach County Unified Local Mitigation Strategy plan articulates the unified goals and objectives of the county and its municipalities to avoid and/or reduce long-term vulnerability to hazards identified by the hazard identification and risk assessment processes. More detailed descriptions of the strategies, programs and actions are contained in the body of the plan and reflected in the list of prioritized projects in Section 5 and Appendix E. Under the revised committee structure of the LMS program, increased attention is given to expanding and refining hazard-specific mitigation strategies exclusive of jurisdictional boundaries, capabilities and interests and to giving appropriate attention to mitigation in planning future land uses (see Appendix D).

The process and criteria employed for ranking mitigation projects and initiatives are described in detail in Section 5.0 of the LMS plan. In response to new federal guidelines applying to grant awards through the Pre Disaster Mitigation, Flood Mitigation Assistance and Hazard Mitigation grant programs, particular emphasis is given to technically feasible and environmentally responsible projects having attractive ratios of loss reduction benefits to cost. Projects involving hard to quantify, but otherwise worthy, benefits are still given serious consideration in light of different sets of criteria and are referred to appropriate alternative funding sources not requiring stringent benefit-cost justifications.

Short-term and long-term recovery strategies are addressed by the County and municipal Continuity of Operations Plans, the Comprehensive Emergency Management Plan, the Post-Disaster Redevelopment Plan, and specialized plans and procedures covering key recovery issues such as debris removal, public services resumption, temporary housing, unmet needs, etc. These plans, procedures and projects address and provide guidance on priorities, processes, schedules, resource requirements, restoration and redevelopment of critical facilities, infrastructure, services, and economic redevelopment.

The Palm Beach County Comprehensive Plan includes the following elements: Land Use, Transportation, Housing, Utility, Recreation and Open Space, Conservation, Coastal Management, Intergovernmental Coordination, Capital Improvement, Economic, Fire-Rescue, Public School Facilities, Health and Human Services, Library Services and Historic Preservation. These elements define the components of the community and the interrelationship among them, integrating the complex relationships of each of these elements in reference to the people who live, work and visit Palm Beach County. Linkages of the COMP plan and LMS have been incorporated into the COMP plan.

Post-disaster mitigation initiatives are developed in response to needs and opportunities identified through collective federal, state and local inputs following the guidance offered by the Post Disaster Redevelopment Plan. The County and LMS members are also available to work state and federal Mitigation Assessments Teams. It is the county's goal following disasters to rebuild to a higher standard (meeting or exceeding codes) and, whenever practicable, to apply sound mitigation practices to reduce future risk.

Appendix B-2: Jurisdictional Initiatives

Appendix B-2 provides a brief summary of representative jurisdictional initiatives reported by the County's 38 municipalities:

- City of Atlantis

  The City of Atlantis has instituted a high speed notification solution (reverse 911) for automating processes of delivering critical and other information to responders, citizens and other interested parties.

  We participate in the Community Rating System program. Our rating of 8 permits our residents in the special flood hazard area to obtain a 10% reduction in their flood insurance premiums.

  We provide our staff with opportunities to attend training seminars to advance and perfect their skills and knowledge relating to natural, societal and technological hazards.

  We contract with the City of Greenacres for Fire Protection and EMT services. Eleven of our police officers have EMT training, and six of those are also trained as firefighters, maximizing the coordination between the City of Green Acres and the Atlantis Police Department.

- City of Belle Glade

  The City of Belle Glade is not presently active in the CRS program, but hopes to rejoin the program. The city has an active storm water rehabilitation and drainage program as part of its NPDES affiliation. Storm drainage improvements to the Hillsboro Canal are an ongoing priority. The City does swale work and storm drain cleaning on a daily basis. As the city rebuilds its streets, it is installing and/or upgrading storm drain systems. The City maintains a website for public outreach and provides translated editions of hurricane and flood guides in Spanish and Creole to its immigrant population. The City plans to link its website to the county's flood information website. HAZMAT training is offered through county resources as needed. Shuttering of Public buildings is also an ongoing priority for outside funding.

- City of Boca Raton

  The City of Boca Raton has a continuous program of installing hurricane shutters on new construction and replacing older shutters with shutters that meet current building codes.

  The City uses a variety of methods to educate its residents regarding all types of disasters, as well as special programs for flood mitigation and hurricane preparedness. These methods include use of the City's cable channel 20, a low-powered City radio station, classes, presentations, videos, printed materials on a variety of emergency issues, and a special

hurricane flier mailed to all households within the City. The City has a contract in place in the event that a large number of area households must be contacted for emergency purposes. Currently the telephone emergency notification system can call approximately 60,000 telephone numbers within an hour.

In addition, the City of Boca Raton has implemented the Community Emergency Response Team (CERT) program, training over 300 people, and will soon initiate a local Citizen Corps chapter. Continuing education and drills, using a variety of topics and scenarios, keep up the interest and skills of the CERT participants.

The City requires a storm water drainage plan for all new construction. Also, the City administers an on-going storm water inspection and maintenance program, removes debris from catch basins, as needed, and annually trims trees along A1A.

The City's building code requires brace gable and roof framing; trusses manufactured in accordance with local wind models, and finished floor elevations to be 18 inches above the minimum 100-year flood level. Also, the City incorporates an exterior glazed opening requirement to provide for hurricane missile impact protection.

Flooding concerns have been addressed in its flood damage prevention and floodplain management regulations. They include provisions such as anchoring to prevent flotation, collapse or lateral movement of structure, as well as requiring steps be taken to afford protection of electrical and generating, heating, ventilation and air conditioning equipment from flooding.

Being in the National Flood Insurance Program (NFIP) has allowed the City the opportunity to participate in the Community Rating System (CRS). CRS involvement directly relates to reduced homeowner flood insurance rates. Boca Raton has a CRS rating of 8. This enables City residents to realize a 10% reduction in their NFIP rates.

Employees from departments throughout the City have attended a broad range of classes on various aspects of emergency management, including response activities, volunteer management in disasters, damage assessment and cost recovery, use of technology for emergency management, mitigation, and terrorism. City building inspectors have taken courses on: retrofitting and flood mitigation, hurricane-resistant structural design, roofing updates, wood construction and fire resistance. Drills and exercises are held throughout the year with staff members at all levels from all City departments. The City's Emergency Preparedness Plan involves all departments and is updated annually.

In addition, the City coordinates with the County and other nearby communities and organizations through participation in the LMS Steering Committee, the Local Emergency Management Network (LEMN), the CRS program, Continuity of Operations (COOP) planning, and many

other emergency management initiatives. We work closely with the Red Cross regarding emergency shelter issues, and with Florida Atlantic University to hold exercises and share information and resources.

The City is a participant in the Statewide Mutual Aid Agreement and the Fire Rescue Services Department has mutual assistance agreements with fire rescue departments in the County and neighboring communities.

The City's Emergency Operations Center (EOC) is a dedicated facility equipped with computers, weather station and satellite, specialized emergency management/communications software, satellite telephone, and Radio Amateur Civil Emergency Services (RACES) equipment. Technology upgrades and expansions for the EOC are reviewed annually and implemented as necessary.

- City of Boynton Beach

The City of Boynton Beach has initiated a number of storm water infrastructure projects designed to address flooding problems in the city's central area. These include construction of a large retention basin in the city's downtown watershed area as well as the replacement of existing clay sewer mains to eliminate groundwater infiltration. In addition, the city has initiated the replacement of aging asbestos water mains with cement lined ductile iron pipe in order to provide code compliant fire protection for the area. The city has also introduced a new Water, Wastewater and Storm water rate structure to encourage conservation.

Being in the National Flood Insurance Program (NFIP) has allowed the City the opportunity to participate in the Community Rating System (CRS). CRS involvement directly relates to reduced homeowner flood insurance rates. Boynton Beach has a CRS rating of 8. This enables City residents to realize a 10% reduction in their NFIP rates.

In 2004 the city adopted local administrative amendments to the Florida Building Code establishing minimum building and construction standards. Among these is an ordinance addressing impacts of construction. This requires the developer, owner or contractor of new residential development resulting in a decrease of 800 square feet or more of permeable area to provide a professionally prepared site drainage plan.

The City recently added an additional fire station to the southeast quadrant of the city and relocated another station to provide coverage to the southwest quadrant. A fifth fire station was approved and is now under construction in the northwest quadrant of the City that will also serve as the fire headquarters and emergency operations center.

The City is also updating existing facilities. It is using the proceeds of a federal grant to fund the installation of an updated hurricane barrier system for the second floor of the City Hall Complex. In order to protect vital records and meet state requirements the city has also entered into

an agreement with a national provider for disaster recovery services for its information technology infrastructure.

As part of its Local Housing Assistance Plan the City of Boynton Beach has stipulated that funds from the State Housing Initiative Partnership Program (SHIP) will be directed to provide emergency repairs to income eligible households in the aftermath of a natural disaster to address emergency housing needs.

- Town of Briny Breezes

  Briny Breezes is a very small coastal town, occupying an area of less than .1 square miles. Year round residents total just over 463. An additional 800 plus are seasonal residents.

  With funding assistance obtained through the Hazard Mitigation Grant Program, the town hall was fitted with hurricane shutters. Plans currently call for securing a portable generator to operate the town's lift stations during storm related power outages. As a coastal community, flood, wind, and surge mitigation remain primary priorities.

  At this writing, the town is in the process of entering long-term agreements with the City of Boynton Beach for fire and medical services and with Boynton Beach for police services. The town retains a third party engineer and building inspector to ensure code enforcement is in conformance with Florida Statutes. The town recently conducted a comprehensive study to ensure its Comprehensive Growth Plan complies with applicable building codes.

  The town raises public awareness for disaster preparedness through a number of initiatives including annual mailings to all residents and hurricane preparedness messages and tips posted on the town's website. The town maintains an ongoing program of yard and open space debris cleanup to reduce the potential for windstorm damage.

- Town of Cloud Lake

  The Town completed a storm drainage upgrade, which included additional roadside swales in 1992. In 1993, the drainage pump was replaced with a more modern up-to-date system. And in 1999, the 24" culvert under Lang Road was replaced with a 30" culvert.

  Current building codes require bracing and strapping of roof in framing and must meet wind load specifications, impact resistant or glazing required of all openings.

  The town participates in the Community Rating System program. It has a rating of 8, which allows its residents to receive a 10% reduction on their flood insurance premium. Flooding concerns are addressed in the flood damage prevention and floodplain management regulations. These

regulations require finished floor elevations to be 24" above the base flood elevation or 18" above the crown of the road, whichever is higher.

The town has a Storm Drainage Regulation Ordinance. It requires all new development to provide adequate drainage for a five-year frequency, 24-hour duration. Also, the town has established a set of maintenance operating procedures for its storm water drainage system, which includes regularly scheduled maintenance.

Cloud Lake has established Outreach Program. It contains information about flooding and hurricane preparedness tips. Information is distributed to residents and out-of-town property owners at least annually. Hurricane guides are also included in this distribution. In addition brochures on flooding, hurricanes, tornadoes, etc are available at the Town Hall.

- City of Delray Beach

The City of Delray Beach has undertaken numerous capital projects to retrofit critical city facilities. They include: shuttering the police, fire stations, environmental services, water treatment plant, and lifeguard headquarters. Also, new generators have been installed at the raw water wells, 6 new storm water pumps stations, and a radio telemetry monitoring system for public utilities.

The city has implemented its Storm water Master Plan that provides for drainage upgrades to verify that all areas of the city can accommodate a minimum 10-year flood event. Regularly scheduled maintenance includes exercising city emergency generators once a month, and regular debris removal is conducted by the BFI through Code Enforcement Department.

The city's building code requires brace gable and roof framing; trusses manufactured in accordance with local wind models, and finished floor elevations to be 18 inches above the minimum 100-year flood level. The city code also requires impact resistance or glazing for building openings.

Being in the NFIP has allowed the city the opportunity to participate in the CRS. This CRS involvement directly relates to reduced homeowner flood insurance rates. Delray, with a CRS rating of 9, enables their residents to realize a 5% reduction in their NFIP rates.

Emergency drills including structural fires, tornadoes, chemical spills, and terrorist response training. Also, the city sends staff to various training conferences (Federal Emergency Management Center in Maryland, National Fire Protection Association, and the Building Officials Association of Florida).

The fire department distributes hurricane preparedness pamphlets, and does presentations to public and private groups. The fire department also conducts citizen training classes on Emergency Response Training (CERT) to residents and other communities.

The City has projects on the Project List, which are all preventative measures. The City proposes to rehabilitate eight of the barrier island storm water pump stations as a preventative measure to improve the drainage capabilities in this critical area. Finally, the City proposes to construct a major drainage trunk main in areas on the barrier island that have experienced ponding during storm events.

- Town of Glen Ridge

  The Town of Glen Ridge is proactive with mitigation initiatives. The town has hazard specific building codes. The town has a public information campaign to educate its residents. The town encourages its employees to attend preparedness and professional training. The town has an emergency operations and post-disaster recovery plan. Glen Ridge supports the acquisition of property as a mitigation technique. In addition, the town retrofits its government buildings.

  The town promotes maintenance programs such as storm water drainage, tree trimming and general litter removal. There are flood damage ordinances in place. The town has a warning system for its residents.

  The town used to participate in the CRS program. However, the town does plan on reapplying but will have to start with FEMA from scratch. The town conducts ongoing public awareness campaigns on hurricane preparedness, flood tips and information, and other hazard-related topics, through its quarterly newsletter that is distributed to all residents.

  The Town of Glen Ridge is a small community with a population of less than 300 and occupies an area of about .2 square miles. For the past six years the town has focused on hurricane mitigation and resolving recurrent flooding problems. Unable to secure grant funding, the town recently self-funded the elevation and shuttering of its Town Hall.

  During recent flood events, the town's sewage system overflowed into the C51 canal. The community is part of a major drainage improvement project being investigated by Palm Beach County and the South Florida Water Management District to resolve this and other flooding problems in the C51 basin.

- Village of Golf

  The Village of Golf has incorporated hazard specific building codes. The residents also can take advantage of tax incentives for mitigating. The village of Golf conducts a public information campaign to educate their residents. The employees of Golf receive preparedness training. Some mitigation initiatives the village partakes in are maintenance programs, storm water drainage. The village has in place emergency operations plan and post-disaster recovery plan. The Village of Golf also has a warning system in place.

- City of Greenacres

To reduce the loss of life, property, and repetitive damage, the City of Greenacres has identified potential projects as part of the Palm Beach County LMS.

- Make structural improvements/retrofit to the roof of the City's Public Safety building that serves as the City's Emergency Operations Center.
- Install hurricane shutters that comply with the Florida Building Code on the windows and glass doors at City Hall.
- Rescue tools & equipment for emergency rescue/recovery personnel.
- Install a generator at City Hall to provide emergency electric power.
- Community Awareness Campaign
- Emergency Preparedness Video

To achieve a safe and sustainable community, the City annually assesses Capital Improvement needs. Storm water Management has been identified as a mitigation measure; $40,000 has been allocated in FY 2006 for canal cleaning.

To reduce potential repetitive loss properties, the City adopted the Flood Damage Prevention Ordinance #2003-17 to ensure that any properties developed within the floodplain meet the required regulations. Since there are no SFHA's within the City's boundaries, the City does not participate in the CRS program.

To optimize the establishment of partnerships, the City participates in Intergovernmental Coordination. In addition to the Local Mitigation Strategy initiative, participation in other pre- and post-disaster coordination mechanisms includes:

- Metropolitan Planning Organization coordinates roadway improvements.
- Palm Beach County Comprehensive Emergency Plan coordinates and identifies responsibilities during disaster situations.
- Multi-Jurisdictional Issues Coordination Forum establishes communication between local governments and service providers.
- Local Emergency Management Network (LEMN) furthers communication among agencies with involvement in emergency management issues.

To continue the distribution of flood information, hurricane/emergency brochures are made available to residents and visitors; certain information is distributed periodically to residents in the City publication, Citylink; and emergency information is presented in person to gatherings of Home Owner Associations.

To improve the coordination of mitigation concerns, the City actively participates in the LMS and LEMN projects. Additionally, the building code requiring gable bracing, glazed openings protected for impact resistance, and buildings constructed in accordance with the 140 mph fastest-mile wind speed, is strictly enforced.

To have a program in place for orderly recovery after a disaster, the City Council has adopted the Greenacres Emergency Management Plan.

To ensure the implementation of a local hazard mitigation strategy, the City Council has adopted the plan produced by the Palm Beach County Local Mitigation Strategy.

- Town of Gulf Stream

  The Town has completed several storm drainage projects and upgrades to existing system. These include the installation of two (2) submersible pumps, pipe systems, easements and generator to provide emergency electric for pumps and Town Hall EOC. Various other catch basins and drainage pipes to approved outfalls.

  The Town participates in the Community Rating System program. It has a rating of 8 which allows its residents to receive a 10% reduction in their flood insurance premium.

  The Town has participated in emergency drills with the City of Delray Beach. Delray Beach provides fire and EMS for the Town.

  The Town paid for a "Wastewater Feasibility Study" from its engineers, Mathews Consulting Inc., covering the entire Town. This study has identified five (5) service areas A-E with special consideration of needs for each. The study provided cost estimates, verified available capacity and identified regulatory agency involved for approval of project.

- Town of Haverhill

  The Town Hall and Maintenance Buildings have been fitted with impact resistant storm shutters. In addition to the drainage improvement projects completed in the Briarwood and Tall Pines developments, the Town recently completed the Durham Street drainage project, the Rutherford Road improvement project and the Briarwood curb and gutter project that eliminated some storage of water that would have accumulated in the street.

  There are additional projects pending to relieve flooding within the Town and immediate adjacent areas. Palm Beach County has been awarded a FEMA HMGP for the Briarwood area and Palm Beach County has received approval for a flood mitigation project from Woodland Avenue to the E-3 canal.

The Town of Haverhill has installed a generator at the Town Hall facility to provide a continuity of emergency and business services during major storm events.

The Town of Haverhill had received a grant from Palm Beach County to resurface 90 percent of the Town's roads resulting in drainage improvements throughout the Town.

During Tropical Storm Fay, there was substantial flooding throughout Cyprus and Park Lanes, recently annexed areas of the Town. The Town of Haverhill may wish to submit for HMGP funding to alleviate this problem by piping the swales and resurfacing the streets resulting in improved drainage and runoff in the area.

The Town of Haverhill is actively pursuing funding to install a lift station at the Town Hall property. The current budget includes funding for swale reconstruction, paving, and grading roads and the installation of sidewalks along Club Road.

Future Capital Improvements include Outfall ditch piping to Club Road drainage and installation of an exfiltration trench at the Towner Park subdivision.

The Town of Haverhill distributes quarterly newsletters to all residents to promote public awareness, disaster preparedness and mitigation tips.

Other than the grant received from Palm Beach County, funding for all projects has been through the Town's budgetary process.

- Town of Highland Beach

The Town of Highland Beach has retrofitted a number of facilities to make them more disaster resistant. Also, the town has fitted all public buildings with hurricane panels or impact glass. As documented in its Comprehensive Plan, Capital Improvement Element, the town plans to implement a number of hazard mitigation capital projects and initiatives over the next five years.

The Town is using the current edition of the Florida Building Code as mandated by the Florida Building Commission.

Highland Beach has addressed hazards in its Comprehensive Plan. In addition, the town has prepared and adopted a Floodplain Management Plan in 1997, which qualified the town to be in the NFIP, qualifying the residents of the town to receive reduced flood insurance premiums. Reductions in the NFIP premiums have been achieved, because the town actively participates in the CRS program. The Town of Palm Beach has a CRS rating of 9, which enables their residents to realize a 5% reduction in their NFIP rates. The Town has installing an automatic telephone notification system that will play recorded information regarding imminent emergencies.

- Town of Hypoluxo

  Up to now, Hypoluxo has self-funded its mitigation initiatives. The town participates in the Community Rating System, holding a class 8 rating, which enables residents to receive a 10% reduction in NFIP rates. All public buildings are fitted with hurricane shutters. Emergency services are contracted out to surrounding communities.

  Annually, in conjunction with its CRS outreach activities, the town distributes mailings to all households to promote public awareness and to provide residents with disaster preparedness and mitigation tips and information. The town also offers disaster preparedness brochures at its town hall. Town officials hold regularly scheduled meetings with home owner associations on a variety of subjects including disaster preparedness and mitigation measures.

- Town of Juno Beach

  In 2004, the Town amended their local codes to bring them current with the change to the Unified Florida Building Code. The municipal complex is fitted with storm shutters and impact glass, has an emergency generator and utilizes a reverse 9-1-1 emergency alert system.

  The Town participates in the Community Rating System program and has an impressive class 5 rating (currently the highest rating in the County), which qualifies residents with a 25% reduction on their flood insurance premiums. Residents receive frequent newsletters containing hurricane, flooding and other disaster preparedness information. The Town hosts resident meetings as part of its CRS program. One of the Town's two loss structures was recently mitigated by a special drainage improvement project. The Town has two repetitive loss properties.

  Because the Town's coastline is particularly susceptible to serious beach erosion, it maintains an aggressive beach restoration and re-nourishment program. The Town recently annexed 340 acres of environmentally sensitive land which it plans to maintain in its nature state.

- Town of Jupiter

  The Town of Jupiter has made improvements to major drainage canals and systems over the last couple of years. The Jupiter Hospital drainage canal has been cleaned and modifications to the fixed weir structures have been made. The modifications allow for an increased discharge of water during a major storm. The salinity barrier has been converted to an operable structure allowing the town to discharge water prior to and during a major storm event. The Loxahatchee Drive canal has been improved with erosion control system. Sims Creek has had a revetment installed for erosion control. The Pennock Industrial Park area drainage system has been improved to prevent street flooding. The Cypress Drive drainage project has been completed.

The town has implemented its Storm water Master Plan that recommends drainage improvements for areas that have marginal systems. The Master Plan was updated in September of 2007. Regularly scheduled maintenance includes exercising the pump station generators once a month and inspecting inlets for debris on a regular basis.

The town has adopted the 2004 Florida Building Code. The criteria used for finish floor elevations is the greater of the South Florida Water Management District's criteria, six inches (6") above the 100 year flood elevation established by the FIRM map or eighteen inches (18") or seven inches (7") (respectively for residential and non residential construction) above the adjacent crown of the road.

The town's "Guide for Development Design and Construction Standards" provides the minimum design criteria for developments. Road design criteria for developments are based on the ten (10) year one (1) day rainfall event. Local roads are permitted to flood to the crown of the road. Collector roads must have their width of the road dry. The Guide also has criteria for erosion and sediment control.

The town has a Storm Emergency Response Plan that outlines the activities it will undertake in the event of an approaching hurricane or tropical storm. An Emergency Operations Center was built in 2002 and is fully operational. The town is in the process of developing a floodplain master plan.

Being in the NFIP has allowed the town the opportunity to participate in the CRS. This CRS involvement directly relates to reduced homeowner flood insurance rates. Jupiter, with a CRS rating of 7, enables their residents to realize a 15% reduction in their flood insurance rates.

- Town of Jupiter Inlet Colony

The Town of Jupiter Inlet Colony has retrofitted its Administration/Police facility with hurricane shutters to make it more disaster resistant. The Town has a portable generator to provide power to the Administration/Police facility in the event of an emergency situation. The emergency generator is maintained and exercised regularly.

In 2008, the Town updated its Building Code by adopting by reference the Florida Building Code together with all amendments thereto, including but not limited to, the Building Code 2004 edition with 2005, 2006, and 2007 Amendments, the National Electrical Code 2005 edition, Fuel Gas Code 2004 edition with 2005 Amendments, Mechanical Code 2004 edition with 2005 Amendments, Plumbing Code 2004 edition with 2005 Amendments, Residential Code 2004 edition with 2005 and 2006 Amendments, Florida Existing Building Code 2004 edition with 2005 and 2006 Amendments, and Florida Fire Prevention Code 2004 edition.

In addition to the Building Code, the Town's Code of Ordinances addresses coastal construction, flood damage prevention and reduction,

and storm drainage regulation. Coastal construction requires all new construction to be anchored to their foundations in such a manner as to prevent flotation, collapse, or lateral movement of the structure. Pile foundations are required for structures located in Federal Emergency Management Agency Flood Insurance Rate Map "V" "velocity" zones or where impacted by wave action. This requirement for all new construction as well as substantial improvements is also applicable to flood damage prevention in all areas designated special flood hazard. Flood damage prevention requires electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities in areas of special flood hazard to be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding. The storm drainage regulation requires all new construction to provide a plan for adequate drainage for a five (5) year frequency, twenty-four (24) duration rainfall intensity curve. Additionally, the Town has established a storm drainage maintenance plan, which provides for periodic storm water inspection of its drainage system and hydraulic vacuum cleaning of all basins and lines. Bi-annual inspection of properties in the Town requires and enforces the clearing, cleaning, and trimming of vegetation and trees or the removal of dead or substantially dead trees and other abatement, such as removal of coconuts, as the Town deems necessary for the health and safety of its residents. Coastal Management has also been addressed in the Town's Comprehensive Plan.

Jupiter Inlet Colony has a Hurricane Plan for safeguarding the residents and outlines the activities the Town will undertake in the event of an approaching hurricane or tropical storm. The Plan provides for coordination of effective emergency management utilizing and cooperating with existing government agencies and resources in conjunction with private resources and equipment. Post-disaster inspection, damage assessment, and recovery are also addressed.

The Town disseminates information relative to disaster planning, preparedness, evacuation, and mitigation to its residents via an automated telephone messaging system and a community newsletter. It also coordinates and works in cooperation with the Property Owners' Association, which has established a "telephone squad" to quickly inform and instruct residents in the event of an emergency situation. Residents are advised to monitor local radio and television stations for weather updates and evacuation information. Copies of Palm Beach County's Hurricane & Flood Survival Guide are available to residents at the Town Administration/Police facility.

- Town of Lake Clarke Shores

The Town participates in the Community Rating System program and currently has a 9 rating. This gives our residents a 5% reduction in their flood insurance rates.

Storm drains are maintained by the Utilities Department. The drains are

checked on a regular basis to ensure that the drains are free from debris and are in good condition.

The town has an emergency generator that will allow the town hall and police department to continue operation in the event of power outages during tropical storms, hurricanes or other disasters. The generator is tested on a weekly basis to ensure proper working order.

In April, 2007, the Town began construction on the new Town Complex. The Town Hall and Police Department buildings have been built as per current construction standards, which include having impact resistant windows and meeting wind load requirements. The Town Hall has been completed and in use since April 2008. The Police Department/EOC has been in use since November of 2008. The Town relied solely on town funds to finance the construction.

The Chief of Police attends Florida Police Chief's Association seminars that include emergency management classes. Town Police Officers have received incident Command training and Biological, Chemical and Explosives training. The officers participate in ongoing training as 1st responders and receive EMT training.

Town residents are mailed a newsletter each month. This newsletter contains various informational articles including flooding and hurricane preparedness. A Code Guidelines booklet also offers hurricane information and tips on how to prepare for an upcoming storm, in addition to information on various town codes.

- Town of Lake Park

Lake Park is a town of approximately 9,100 residents located on the Intracoastal Waterway in northern Palm Beach County. The Town was established as Kelsey City in 1923. Its Town Hall was constructed in 1927 and is listed on the National Register of Historic Places. The Town Hall not only survived the 1928 hurricane, but, at the time, it served as a shelter for residents. The Town Hall has recently been restored and hardened with impact resistant windows that met standards for Historic Preservation. Accordion shutters and new doors are the next hardening projects proposed for Town Hall.

Lake Park participates in the Community Ratings System as a Class 9 community. This CRS involvement directly relates to a reduction in homeowner flood insurance rates. A CRS rating of 9 enables their residents to realize a 5% reduction in their NFIP rates.

The Town has an active, ongoing program of drainage improvements and swale reconstruction, jointly funded with local, county, state, and federal funds. In 2008 the Town initiated a Storm Water Utility to help expedite storm water improvements. The Town is a NPDES community. A major storm drainage project proposed for 2009 is Lake Shore Drive ($3.5 million) anticipated to be funded by the storm water utility, legislative

appropriation, Florida Department of Environmental Protection (FDEP), TMDL and 319 Non-Point Source Pollution. Also a Park Avenue reconstruction project ($3.1 million) anticipated to be funded by FDEP, TMDL, Palm Beach County, FDOT/MPO and 319 Non-Point Source Pollution, will include storm drainage improvements.

A seawall project at Lake Shore Park has been completed funded in part by FIND and FWC.

Cleanup and tree replacement at Kelsey and Lake Shore parks associated with the 2004/2005 hurricanes have been accomplished funded in part by a Fish and Wildlife conservation grant and a Florida Department of Agriculture Urban Forestry grant.

The Town's Lake Park Harbor Marina is a priority with future mitigation initiatives to include two breakwater barriers, generators, and dredging.

Additional hurricane hardening projects include:

- Public Works/EOC windows and generator ($75,000)
- Library accordion shutters, roof and generator ($100,000)
- Town Hall accordion shutters on doors on north side of building ($130,000)

A project is currently underway to reconstruct alleyways in the downtown district. The project includes better storm drainage. The project is funded in part by CDBG.

- City of Lake Worth

The City of Lake Worth continues to make enhancements that protect the citizenry and employees of the community during devastating weather. Through a grant from the State we were able to receive funding that allowed the city to purchase a telephonic system that allows us to contact each citizen in times of an emergency. This communication format permits our Emergency Operation Center to contact specific areas of the city and alert residents to either evacuate the area or alert them of a specific problem in their neighborhood.

Through another grant the City was able to purchase shutters for our police/fire dispatch area. This addition ensures our emergency operators remain safe during inclement weather. Our most precious asset, our employees, can now work without fear of harm.

The City in its attempt to protect its beach from soil erosion has planted vegetation that protects the shoreline during high wave action. The City also ensures during the season that our catch basins are cleared at least three times between June and November.

The City passes out reminders in public places (libraries, restaurants, bars, and city structures) the need for all to prepare for the upcoming hurricane season. Table toppers are placed on tables and counters of

these establishments asking customers “ARE YOU READY”? This medium has allowed us to reach potential victims and suggest they begin preparations now to protect their families from harm.

Being in the NFIP has allowed the city the opportunity to participate in the CRS. This CRS involvement directly relates to a reduction in homeowner flood insurance rates. City of Lake Worth with a CRS rating of 9 enables their residents to realize a 5% reduction in their NFIP rates.

- Town of Lantana

  Most town-owned facilities have been shuttered, including the Emergency Management Operations Center, which is housed at the First Baptist Church on Lantana Road.

  Lantana participates in the Community Rating System. The CRS rating is a 9, which enables the residents to receive a 5% reduction in the NFIP rates. And, is a major participant in the Outreach Project Strategy (OPS). The town repaved all town roads during the period 2001-2003 and re-contoured all swales to restore proper drainage throughout the community. In 2004, the town’s code was revised to require new developments to provide deeper swale cross sections for greater water retention and drainage capacity. All signalized intersections on Dixie Highway (US1) have been retrofitted with wind-resistant mast-arm traffic signal poles and the town plans to coordinate with the county to ensure all traffic signals east of Interstate 95 are retrofitted as soon as possible.

- The Town of Loxahatchee Groves

  The Town of Loxahatchee Groves is 12.5 square miles with 29 miles of unpaved roads and 30 miles of canals. The Loxahatchee Groves Water Control District’s (LGWCD) main responsibilities are the maintenance of secondary and primary drainage systems within our service area boundaries. The regional surface water management system is operated by the South Florida Water Management District (SFWMD). SFWMD does not get involved with the day-to-day operations of LGWCD. However, they do have permitting authority over outfall sites, allowable discharge rate, water use, and water quality.

  The District builds, operates, and maintains canals and water control structures. In Loxahatchee Groves, seven north-south canals drain to the south into the C-51 Canal that flows west to the SFWMD’s Storm Water Treatment Areas and east to the Intracoastal Waterway.

  The District has the responsibility in proper management of storm water run-off. Each year the Town receives, on average, 60 inches of rain. The average rainfall in the Town equates to over 13 billion gallons. If you placed all of the water the Town received annually into one-gallon containers, those containers would circle the Earth over 50 times. It is important to manage the flow of this volume of water through the Town’s canals for maximum protection and benefit to property owners.

The drainage system operates by gravity flow. Any storm water that is not absorbed into the ground moves southward through the Town in a network of canals.

First the water flows into the Town's maintained canals known as the "secondary" drainage system. The final movement of the water is into the "primary" drainage system that consists of the larger canals, such as the C-51. The primary drainage system is the responsibility of the South Florida Water Management District.

The Town of Loxahatchee Groves was incorporated in November 2006 and the Town Council started meeting in March 2007. In the Town's short time, it has not received any grants for emergency related issues however; the Town is researching and pursuing grants in Fiscal Year 2008. The Town does not participate in the National Flood Insurance Program at this point in time. The Town has a brief and concise emergency management plan that will be activated along with the Town's Emergency Operations Center in the event of a disaster. The Town of Loxahatchee Groves has an active volunteer base that assists the Town in preparing the EOC for activation; Loxahatchee Groves Certified Emergency Responders Team. Emergency drills are held periodically. Staff is currently completing all necessary NIMS certification.

- Town of Manalapan

The Town has installed storm shutters at its Public Library, which is used as an emergency operations center during hurricanes and other disasters.

In 2003, the town amended their local codes to bring them current with changes in the various standard codes (e.g., fire prevention, gas, building, plumbing, electrical, mechanical) along with the Model Palm Beach Countywide Amendments to the building, gas, mechanical, plumbing, electrical, and roofing codes.

The town participates in the Community Rating System program. It has a rating of 9, which allows its residents to receive a 5% reduction in their flood insurance premium.

The town has a Storm Drainage Regulation Ordinance. It requires all new development to provide adequate drainage for a five year frequency, 24-hour duration. Also, the town has established a set of maintenance operating procedures for its storm water drainage system.

Manalapan has an established Outreach Program. It contains information about flooding and hurricane preparedness.

Also, new generators have been installed at the raw water wells, 6 new storm water pumps stations, and a radio telemetry monitoring system for public utilities.

The city has implemented its Storm water Master Plan that provides for drainage upgrades to verify that all areas of the city can accommodate a minimum 10-year flood event. Regularly scheduled maintenance includes exercising emergency generators once a month, and regular debris removal is conducted by the Town staff through the Code Enforcement Department.

The city's building code requires brace gable and roof framing; trusses manufactured in accordance with local wind models, and finished floor elevations to be 18 inches above the minimum 100-year flood level. The city code also requires impact resistance or glazing for building openings.

Being in the NFIP has allowed the city the opportunity to participate in the CRS. This CRS involvement directly relates to reduced homeowner flood insurance rates. Manalapan, with a CRS rating of 9, enables their residents to realize a 5% reduction in their NFIP rates.

Emergency drills including structural fires, tornadoes, chemical spills, and terrorist response training. Also, the city sends staff to various training conferences (Federal Emergency Management Center in Maryland, National Fire Protection Association, and the Building Officials Association of Florida). The Town is also providing NIMS training to staff.

The fire department distributes hurricane preparedness pamphlets, and does presentations to public and private groups. The fire department also conducts citizen training classes on Emergency Response Training (CERT) to residents and other communities.

- Town of Mangonia Park

  Mangonia Park participates in the Community Rating System program. The Town publishes and distributes a quarterly newsletter to all residents and businesses to keep the community abreast of projects and activities relating to flood and hurricane preparedness, mitigation, infrastructure, public safety issues, etc. At this writing, the town has a major storm water improvement project planned for the Hill Avenue area. The Town participates in the NPDEF program and has numerous storm water management, water quality, and storm structure cleaning projects on the drawing board. An emergency generator was recently installed at the water plant. The purchase of an additional generator is planned for the Town Hall/Police Administration building. Shuttering of all critical public buildings has been completed. The Town's next priority is setting up generators for public buildings.

- Village of North Palm Beach

  The Village of North Palm Beach, on a continuing basis, updates local Codes to bring them to current standards. As of March, 2009, The Village has adopted the 2007 edition of the Florida Building Code. The Village Codes also include provisions for coastal construction, constructions requirements for canals, bulkheads, seawalls, docks, piers and erosion

control structures as well as preservation of sand dunes and mangrove stands and flood damage protection.

In 2000, the Village started a dredging program for the internal canal channels. Phase 1, 2 and 3 of the overall project are complete. Phase 4 began at the end of 2008.

The Village has a Comprehensive plan in place that outlines and provides a long-range plan for the development and continued maintenance of the Village. Mitigation projects completed by the Village since 2007 include seven drainage repair projects, six of which have been routine repair projects and one being an emergency repair. The Village has funded each one of these repairs through their budgeting process.

The Village participates in the Community Rating System (CRS). The Village currently has a CRS rating of 8, which allows the residents to receive a 10% reduction in their Flood Insurance premium.

The Village participates and conducts National Pollutant Discharge Elimination System (NPDES) inspections for construction sites to minimize the impact of storm water erosion and sedimentation control.

The Village currently contracts out the sweeping of the alleys that parallel U.S. #1 on a monthly basis. This has reduced the amount of debris and litter that would have ended up in the Lake Worth Lagoon.

The Village publishes a monthly newsletter that is distributed to residents and businesses. The newsletter has provided pertinent information regarding hurricane preparedness and maintenance of drainage swales among other items. The Village website also contains helpful information reference to hurricane preparedness. In addition the Village makes available a new resident package that contains a brochure that outlines hurricane preparedness information. Pre-disaster educational programs are offered to any Village group that requests them and an annual Village-wide pre-hurricane season educational program is offered by the Public Safety Department.

The Village has an Emergency Response Plan that outlines activities that it will take in the event of an approaching hurricane. The Village encourages employees to become well versed in the Village's emergency management procedures. The Village receives automatic aid for fire and emergency medical related incidents as a result of a Level or Service requirement that has been instituted throughout Palm Beach County. The Village's Department of Public Safety Law Enforcement Division is a participant in Palm Beach county as well as NAMAC (Northern Area Mutual Aid Consortium of Palm Beach County). The Village of North Palm Beach is also a signer of the Statewide Mutual Aid Agreement.

The Village is represented as a member of the Local Mitigation Strategy Committee in Palm Beach County and is also a participating member of

the Palm Beach County Emergency Management Team, which holds bi-monthly meetings on emergency management issues.

- Town of Ocean Ridge

  In April 2000 the Town of Ocean Ridge started topographical surveying and a flood control study for storm water drainage for certain flood prone areas of Town. In December 2000 the flood control study was completed to provide design solutions and the estimated costs to alleviate these flooding problems. In August 2001 the Town directed the Engineers to design and permit a specific set of recommendations from the flood control study for the storm water drainage improvements. The Town is presently is the process of implementing the storm water drainage improvement project.

  The majority of the Town's 13 Repetitive Loss Properties are located in the area where the Town is implementing the storm water drainage improvements. The Town actively cleans, maintains and repairs the existing storm water drainage system throughout the Town.

  The Town completed a project of purchasing 2 portable 6" suction pumps for emergency situations to assist in alleviating flooding problems in flood prone areas of Town during storm events.

  The Town participates in the NFIP Community Rating System Program. The Town has a rating of 8, which allows its residents to receive a 10% reduction in their flood insurance premiums.

  The Town has adopted the Florida Building Code and the Palm Beach County Amendments to the Florida Building Code as the building code for the Town of Ocean Ridge. The Town has adopted the most recent editions of the Standard Fire Prevention Code as the fire code of the Town. The Town had also adopted the most recent edition of the Life Safety Code, as promulgated by the National Fire Protection Association (NFPA-101).

  The Town has a flood damage prevention ordinance whose purpose is to promote the public health, safety and general welfare and to minimize public and private losses due to flood conditions in specific areas by different provisions. The Town has a storm water systems ordinance for the enforcement, inspections and monitoring of these systems, industrial activity, illicit discharges, spills and dumping whose purpose is to promote the health, safety and general welfare of the inhabitants and to comply with federal and state law and regulations regarding water quality. The Town has a landscaping ordinance, which has a section on dune preservation whose purpose is to protect the functional integrity of the beach/dune system. The Town has a coastal construction ordinance whose purpose is to provide minimum standards for the design and construction of buildings and structures to reduce the harmful effects of hurricanes and storms along the coastal areas of the town, in conformance with the requirements of *F.S.* Ch. 161. It is further the intent

of this ordinance to establish a coastal protection zone as required by law.

The Town also has ordinances on minimum finished floor elevations in the construction of buildings, drainage requirements for construction, and flood damage prevention for utility systems.

The Town has a Hurricane Policy Manual that outlines the activities it will undertake in the event of an approaching hurricane or tropical storm. At least one hurricane preparedness drill is conducted annually.

The Town distributes flood and hurricane information; hurricane/emergency brochures are made available to residents and visitors, certain information is distributed periodically to residents in the Town newsletter and the Town newspaper, and emergency information is given to residents directly by contacting the Police Department.

The Town approved Resolution # 2001-07 adopting the Statewide Mutual Aid Agreement for catastrophic disaster response and recovery. The Town approved Resolution # 2000-15 executing an Inter-local Agreement between the Town of Ocean Ridge and Palm Beach County adopting the Local Mitigation Strategy.

- City of Pahokee

  The City of Pahokee has retrofitted critical facilities to make them more disaster resistant. The City's Comprehensive Growth Management Plan addresses the following elements as mitigation initiatives air pollution, drought, flood, hazardous materials and Wellfield contamination. There are future land use ordinances to address floods, hurricanes and Wellfields. The City of Pahokee has adopted the Palm Beach All Hazards Local Mitigation Strategy.

- Town of Palm Beach

  The Town of Palm Beach has retrofitted a number of facilities to make them more disaster resistant. Construction of a new central Fire-Rescue station and EOC began in May 2003. The projected completion date is July 2004. As documented in its Comprehensive Plan, Capital Improvement Element, the town completed the following projects in 2003: Lake Way storm drainage improvements from Orange Grove Road to Mediterranean Road. Storm drainage, water mains and sanitary sewers were improved or upgraded within the project area. Two sanitary force mains for the E-1 and E-2 pump stations were replaced during the Lake Way drainage improvements: the storm drainage improvement project from Emerald Lane to the D-4 storm water pumping station south of Miraflores Drive. The Town has completed the north-end and mid-town beach re-nourishment project. Three beach nourishment projects will be undertaken, north-end, mid-town and south-end.

The Town's Building Code, recently (2002) has been updated by adopting by reference the 2001 Edition of the Florida Building Code. The building code includes key hazard-specific provisions. The code requires: brace gable end roof framing, corrosion resistant hurricane clips, storm shutters for windows, and exterior doors and skylight, and trusses manufactured to meet 140-mph 3 second gust. In addition, the Code requires sprinkler systems in new commercial and multi-family (3 or more units) structures, as well as in single family homes over 10,000 square feet. The town has amended the code to include requirements for uses using liquid fuel. They reflect the standards recommended by the National Fire Protection Association.

Besides the building code, other pertinent town ordinances address: coastal construction, dune removal or alteration, and flood damage prevention. The coastal construction code provides for more stringent building standards in the coastal building zone, the land area between the seasonal high water line of the Atlantic Ocean and the waters of Lake Worth. The purpose of the Dune Removal or Alteration Ordinance is to protect the functional integrity of the beach/dune system. It establishes exclusionary areas where no construction can occur or motor vehicles can travel. The town's Flood Damage Prevention Ordinance is to minimize public and private losses due to flood conditions by restricting or prohibiting uses, requiring flood damage construction techniques are applied at the time of initial construction, control alteration of the natural floodplain, control filling, grading and dredging, and controlling the use of flood barriers that might adversely affect neighboring properties.

Palm Beach has addressed hazards in its Comprehensive Plan (see Table D-2). In addition, the town has prepared and adopted a Floodplain Management Plan in 1997, which qualified the town to be in the NFIP, qualifying the residents of the town to receive reduced flood insurance premiums. Reductions in the NFIP premiums have been achieved, because the town actively participates in the CRS program. The Town of Palm Beach has a CRS rating of 7, which enables their residents to realize a 15% reduction in their NFIP rates.

The town has developed a Hazard-Specific Emergency Response Plan which includes: Hazard-Specific Emergency Response Plans, Emergency Response Plan Appendices, Functional Annexes, Functional Annexes Addenda, and Authority Reference. The Town conducted a five-week mock emergency response training, which included activating the EOC and involving personnel from all Town Departments.

The Town of Palm Beach is a member of the Florida Floodplain Managers Association (FFMA).

Staff involved with emergency management and building inspection are provided several opportunities each year to attend seminars and conferences to advance their skills and knowledge regarding natural and technological hazards.

- City of Palm Beach Gardens

  The City of Palm Beach Gardens has been in FEMA's Community Rating System (CRS) for seven years, with a rating of 7 and will likely qualify for a higher rating soon. The City participates in several CRS activities such as public outreach to residents in Special Flood Hazard Area (SFHA). These activities include providing flood zone information to residents and insurance agents, providing hurricane protection information in the local newsletter, and participating in the annual Hurricane Expo in cooperation with Palm Beach County. As a result of involvement in the CRS, reductions in the flood insurance premiums have been achieved by City residents.

  The City also actively participates in FEMA's Community Emergency Response Team (CERT). The Fire Department hosts CERT training for all residents, as well as City employees.

  The City has adopted the Florida Building Code. The building code includes key hazard-specific provisions. The code requires: brace gable end roof framing, corrosion resistant hurricane clips, storm shutters for windows, and exterior doors and skylight, sand trusses manufactured to meet the required wind load speed.

  Besides the building code, the other pertinent City ordinance addresses flood damage prevention. The City's Flood Damage Prevention Ordinance is to minimize public and private losses due to flood conditions by restricting or prohibiting specific uses, requiring flood damage construction techniques are applied at the time of initial construction, control alteration of the natural floodplain, control filling, grading and dredging, and preserving open space when possible, in the flood plain. The City also requires elevation certificates for each newly constructed building in the SFHA.

  The City has a Comprehensive Emergency Management Plan that outlines the activities it will undertake in the event of an approaching hurricane or tropical storm. Training is conducted annually for essential personnel and preparedness drills are conducted prior to the hurricane season. Staff has also been trained in such programs as Rapid Assessment Planning by the State of Florida.

  The City requires a storm water drainage plan for all new construction. Also, the city administers an on-going storm water inspection and maintenance program, which involves removing debris from catch basins and canals, as needed. The City also is involved in an ongoing swale restoration project in the older areas of the City.

- Town of Palm Beach Shores

  The Town of Palm Beach Shores has constructed significant infrastructure projects over the past 24 months. Included was the construction of eleven (11) open drainage areas providing additional

exfiltration of storm water. These drainage areas were constructed at 5 ½ interior crosswalks throughout the Town and assist in groundwater recharge and improvement of water quality. Roadway improvements were made to Lake Drive, which included renovations of catch basin aprons and grates as well as the replacement of a storm water pipe at Lake Drive and Bamboo Road. Provided exfiltration to a new public works entrance located on Cascade Lane at the north of the Town Municipal site. This area assists in groundwater recharge and improvement of water quality.

A hazardous spill program exists through an interlocal agreement with Palm Beach County, The City of West Palm Beach being primary responder to the Town of Palm Beach Shores. If there is a hazardous material spill in Town, it is required that appropriate state and local authorities are notified.

The Town flood control is dictated through SFWMD. All new development must comply with SFWMD requirements with a professional Building Official certifying all projects for compliance.

The Town of Palm Beach Shores, through its comprehensive plan, has a storm water drainage design for storms of 3-year frequency, 24-hour duration. The Town has also adopted an ordinance requiring new development and significant redevelopment projects to be in compliance with South Florida Water Management District requirements for both quantity and quality. Although new development is very limited, all projects have met the required quantities and quality as set by South Florida Water Management District with proper inspections being performed on all sites.

Being in the NFIP has allowed the town the opportunity to participate in the CRS. This CRS involvement directly relates to a reduction homeowner flood insurance premium rates. The Town of Palm Beach Shores, with a CRS rating of 9, enables their residents to realize a 5% reduction in their NFIP rates.

- Village of Palm Springs

  The Village of Palm Springs is a Community Rating System participant, holding a class 8 rating. It conducts various mitigation and public outreach activities in accordance with NFIP and CRS guidelines. Its building codes have been upgraded in accordance with the state's Standard Building Code. The Village recently built new Administration, Recreation and Public Safety buildings that meet or exceed the new, more stringent, building standards, including hurricane shutters. The Village has made numerous infrastructure upgrades in its recently annexed areas, including construction and enlargement of swales for improved drainage, and the construction and interlinking of catchment basins.

- City of Riviera Beach

The City of Riviera Beach has installed a flexible wind abatement system on the administrative buildings to provide support during dangerous hurricane winds. The city recently installed an automatic telephone notification system that will play recorded information regarding imminent emergencies that affect the residents of the community. Also, the City is in the process of installing a new generator in the Police/Fire Communications Center.

The City recently implemented an on-going storm water inspection and maintenance program to remove debris from catch basins, as needed.

The fire department distributes hurricane preparedness pamphlets, and does presentations to public and private groups. The City has a Storm Emergency Response Plan that outlines the activities it will undertake in the event of an approaching hurricane or tropical storm. At least one storm preparedness drill is conducted annually.

Staff assigned to the City's Emergency Management Team conducts tabletop emergency drills for response to emergencies such as tornadoes, chemical spills, and terrorist response training. City staff from Administration, Fire-Rescue Services, Recreation Services, Police Services, Public Works and Water Utilities has attended classes on emergency management.

The City adopted a new flood protection ordinance in 2001, which implemented new standards for finished floor elevations. Additionally, regulations addressing wetlands have been incorporated in site plan projects that require developers to maintain the wetlands or restore them if disturbed by construction. The City's dune re-nourishment and realignment standard requires that the dune aligns with the natural dune line. The City adopted a storm water management system in 2002 which imposed restrictions on all developments within the City and assessed fees on the developments depending on the type to offset the cost of managing the system.

To prevent the loss of essential services at the municipal complex, the City has weatherproofed the buildings and is making various renovations to update the facilities. Through the Comprehensive Plan, permanent residential development is being directed away from the Barrier Island and coastal high hazard areas. Over the past two years, the City Engineer and Building Official have taken courses including adopting new regulations in preparation for the City to be a part of the Community Rating System.

- Village of Royal Palm Beach

  All of the critical public buildings in the Village of Royal Palm Beach, including Village Hall, Police and Fire Stations, Recreation Center, and Water Treatment Facility, are fitted with hurricane protection shutters.

The Village is an active participant in the Community Rating System to the extent necessary. Fortunately none of the village is within a 100 year flood plain so the amount of active participation needed is minimal.

A major drainage improvement project was recently completed in the La Mancha area following flooding in connection with Hurricane Irene in 1999. Other significant drainage improvements are underway along State Road 7. The Village has an ongoing drainage improvement program, and provides routine maintenance of swales, catch basins, etc.

Public outreach is accomplished primary through quarterly newsletters, which go out to all residents and businesses within the Village. These newsletters keep residents advised on the status of mitigation and public works type projects and provide general and seasonal preparedness tips and information on a variety of hazard threats. Village professional personnel keep abreast of disaster related practices through active participation in educational forums and training workshops.

- City of South Bay

  The City of South Bay is small rural community situated in the extreme western area of the county near Lake Okeechobee. It is predominantly an agricultural community with a significant immigrant population. Better prepared and with a more modern road system, the community hopes to avoid a recurrence of a deadly hurricane like the 1928 storm that devastated the area. In the event of a disaster, the City has plans to coordinate with county and state enforcement agencies and with the School Board to safely evacuate residents (particularly the disadvantaged and elderly) to the City's primary shelter or out of the area.

  The community actively supports public disaster awareness efforts, including multi-lingual publications and events directed at its large Spanish and Creole speaking population.

  The Okeelanta Cogeneration Plant, a 74-megawatt biomass cogeneration project is located six miles south of South Bay. It is the largest bagasse/biomass cogeneration plant in the U.S. The plant provides process steam and power to area sugar refineries and sells its excess electricity to Florida Power & Light. To meet stringent emissions requirements, special initiatives have been implemented to protect the environment.

- Town of South Palm Beach

  The town requires a storm water drainage plan for all new construction. Also, the town administers an on-going storm water inspection and maintenance program, removes debris from catch basins, as needed, and annually trims trees along A1A.

Being in the National Flood Insurance Program (NFIP) has allowed the town the opportunity to participate in the Community Rating System (CRS). CRS involvement directly relates to reduced homeowner flood insurance rates. This enables town residents to realize a reduction in their NFIP rates.

In addition, the town has installed accordion shutters to protect the Town Hall and police department. A 90kw generator was installed and will supply the Town Hall, EOC, and police department during an emergency.

Also, a commercial ice maker was purchased to provide residents with ice for medical needs during an emergency.

The Town contracts with the County to use the Dialogic system on an as needed basis. The condominiums and residents are provided with hurricane and evacuation plans prior to hurricane season each year. The Town also implemented an emergency ID card system for key personnel so they can return to the island after an emergency.

The Town has government television channel that can be viewed by approximately 90% of the residents.

The Town also raises public awareness by distributing a hurricane guide to all buildings annually. Brochures are made available to the residents on a variety of disaster/emergency topics including hurricane information, insurance, pet care, business interests, children and disasters, lightning and tornado safety.

Town staff has attended classes on emergency management. All key personnel have been trained in ICS.

- Village of Tequesta

The Village has recently completed construction of a Public Safety Building that contains a state of the art Emergency Operations Center that is compatible with the Palm Beach County Emergency Operations Center. The Village's EOC has a concrete hardened hurricane rated shelter that has a secondary generator and is shuttered and provides alternative power supply for the EOC. The EOC also has communications and backup communications systems.

The Village's Building Code, has been updated to comply with the Florida Building Code, as is mandated by the state of Florida. In addition, the Code requires sprinkler systems in new commercial and multi-family (3 or more units) structures, as well as in single family homes over 10,000 square feet. The town has amended the code to include requirements for uses using liquid fuel. They reflect the standards recommended by the National Fire Protection Association. The Fire Department complies with all National Fire Protection Association regulations.

Besides the building code, other pertinent village ordinances address: coastal construction, dune removal or alteration, and flood damage prevention. The coastal construction code provides for more stringent building standards in the coastal building zone, the land area between the seasonal high water line of the Atlantic Ocean and the waters of the Intracoastal Waterway.

Village of Tequesta has addressed hazards in its Comprehensive Plan. In addition, the village has prepared and adopted a Floodplain Management Plan, which qualified to be in the NFIP, qualifying the residents of the town to receive reduced flood insurance premiums. Reductions in the NFIP premiums have been achieved, because the town actively participates in the CRS program. The Village of Tequesta has a CRS rating of 7, which enables their residents to realize a 15% reduction in their NFIP rates.

The village has a Storm Emergency Response Plan that outlines the activities it will undertake in the event of an approaching hurricane or tropical storm. Staff involved with emergency management and building inspection are provided several opportunities each year to attend seminars and conferences to advance their skills and knowledge regarding natural and technological hazards.

The Village has a Storm Drainage Regulation Ordinance. It requires all new development to provide adequate drainage for a 25 year frequency, 24-hour duration. Also, the village has established a set of maintenance operating procedures for its storm water drainage system.

The Village of Tequesta has an established Outreach Program. It contains information about flooding and hurricane preparedness tips.

The Village's building code requires brace gable and roof framing; trusses manufactured in accordance with local wind models, and finished floor elevations to be 18 inches above the crown of the road and 8.5 feet above mean sea level. The city code also requires impact resistance or glazing for building openings.

Being in the NFIP has allowed the city the opportunity to participate in the CRS. This CRS involvement directly relates to reduced homeowner flood insurance rates. Delray, with a CRS rating of 9, enables their residents to realize a 5% reduction in their NFIP rates.

The Village requires a storm water drainage plan for all new construction. Also, the city administers an on-going storm water inspection and maintenance program, removes debris from catch basins, as needed, and annually trims trees.

- Village of Wellington

  The Village of Wellington has over 80 miles of canals and 250+ acres of lakes. The Village also has six (6) pump stations in place to assist in the

moving of surface water. Procedures are in place to ensure that all canals, drainage structures and pump stations are maintained

The Village of Wellington has been very active in its mitigation efforts. In the late 1990's, the Village of Wellington received a Hazard Mitigation grant from the State of Florida to improve the drainage in a subdivision of Wellington. The project entailed culvert improvements, easement improvements, elevating a road and pump station improvements at a total cost of approximately $750,000.

The Village of Wellington also received a grant to assist in the construction of the Villages' EOC. This grant was obtained in 2000.

In addition, the Village of Wellington is currently shuttering the Wellington Community Complex, which serves as the Council Chambers and is the hub of the community activity. It also serves as a Red Cross Recovery site. A grant was also obtained for this project.

The Village of Wellington participates in the National Flood Insurance Program and consequently is in the Community Rating System program. It currently has a rating of 9, which allows its residents to receive a 5% reduction in their flood insurance premiums. The Village started participating last year and plans on lowering the rating as a result of some planned activities.

The Village recently adopted an ordinance titled "Operation and Maintenance Responsibilities for Storm water Systems. The ordinance provides regulations for the operation and maintenance of water management systems within the Village of Wellington.

The Village of Wellington has an active volunteer base that assists the Village in preparing the EOC for activation. Emergency drills are held periodically. Staff is sent to various training conferences and classes.

- City of West Palm Beach

The City of West Palm Beach has retrofitted a number of facilities to make them disaster resistant. These facilities include all Fire Rescue Stations with door bracing and window protection, the Police Station with window protection, City Hall and Recreational facilities with window protection and door bracing.

The City has installed an Emergency Alerting and Notification Phone System in order to pass information quickly to employees and citizens of West Palm Beach.

The City's Building Code has been updated by adopting the 1997 Edition of the Standard Building Code. The building code includes key hazard-specific provisions. The city's building code requires brace gable and roof framing; trusses manufactured in accordance with local wind models, and finished floor elevations to be 18 inches above the minimum 100-year

flood level. Also, the city recently incorporated an exterior glazed opening requirement to provide for hurricane missile impact protection. The City's Code also reflects the standards recommended by the National Fire Protection Association.

The city requires a storm water drainage plan for all new construction. Also, the city administers an on-going storm water inspection and maintenance program, removes debris from waterways, as needed.

Flooding concerns have been addressed in its flood damage prevention and floodplain management regulations. They include provisions such as anchoring to prevent flotation, collapse or lateral movement of structures, as well as requiring steps be taken to afford protection of electrical and generating, heating, ventilation and air conditioning equipment from flooding.

The City opened a new Fire Station in the south end of the City in 2003. New stations are scheduled in the near future for the north end and western communities.
The City increased Storm water Rates this year to fund future Storm water Projects. This rate increase is expected to raise 26 million dollars. A Bond Issue is scheduled for July, 2004.

Being in the National Flood Insurance Program (NFIP) has allowed the city the opportunity to participate in the Community Rating System (CRS). CRS involvement directly relates to reduced homeowner flood insurance rates. West Palm Beach has a CRS rating of 7. This enables city residents to realize a 15% reduction in their NFIP rates.

The City's Comprehensive Plan is upgraded at least yearly.

West Palm Beach employs a full-time Emergency Management Coordinator (one of only a handful full-time municipal emergency managers in the State). The Coordinator has developed a 24/7 Emergency Operations Center, a City Warning Point, numerous All-Hazard Plans, vulnerability studies and assessments, Recovery Plans, Debris Management Plans, and a new Comprehensive Emergency Management Plan (March, 2004) that thoroughly coordinates city efforts and responsibilities and integrates the County CEMP, where needed, with the City Plan. The CEMP has been approved by the City Mayor and Commission,

The Emergency Manager distributes hurricane preparedness pamphlets, and does presentations to city employees, public and private groups.

The Fire Rescue and Police departments have developed a robust Citizen Corps and Community Emergency Response Team (CERT) Program and conducts citizen training classes on Emergency Response Training to residents, employees, and special groups. Over 400 persons have graduated from these classes in 2003-2004.

City staff from Municipal Services, Fire-Rescue Services, Development Services, Recreation Services, Police Services, and Utility have attended classes, seminars and conferences pertaining to emergency management and/or other mitigation issues. Building inspectors have taken courses on: retrofitting and floor mitigation, hurricane-resistant structural design, roofing updates, wood construction and fire resistance.

Staff involved with emergency management issues and building inspection are provided several opportunities each year to attend seminars and conferences to advance their skills and knowledge regarding natural and technological hazards. Emergency drills and training include structural fires, hurricanes, excessive rain, flooding, tornadoes, chemical spills, and terrorist response training.

Appendix B-3: Inter-Governmental Coordination

Coordination among the numerous governmental entities of Palm Beach County is essential for meeting the needs of Palm Beach County residents, particularly as it relates to issues involving life and property. The County, its 38 municipalities, the South Florida Water Management District, more than a dozen secondary drainage districts, the School Board, regional and state agencies, authorities and taxing districts are among the long list of key players who make direct or indirect decisions that impact on residents, visitors, the economy and quality of life. The LMS seeks to develop and maintain close working relationships with these agencies.

Guidance on how intergovernmental coordination will be conducted and managed is contained in the Intergovernmental Coordination Element of the County's Comprehensive Plan. Goal 1 Objectives 1.1 through 1.5 of the Intergovernmental Coordination Element state that it is the goal of Palm Beach County to provide a continuous coordination effort with all affected governmental entities in order to accomplish the goals of the Palm Beach County Comprehensive Plan and to consider recommendations of affected governmental entities in the County's decision-making process and to ensure consistency with state and regional plans. Objective 1.3 states that intergovernmental coordination strategies will be used to satisfy special planning needs and to further the goals, objectives and policies of the Palm Beach County Comprehensive Plan that would be advanced by intergovernmental cooperation.

The LMS conforms with and applies the principles and guidance offered by the Comprehensive Plan to ensure that the Unified LMS plan considers, is consistent with, and is supportive of the County's Comprehensive Plan, the related plans of all municipalities and other governmental entities, and with regional, state and federal plans and requirements. The LMS also ensures that the Unified LMS is consistent with and supports the county and municipal comprehensive emergency management plans, post-disaster redevelopment plans and other plans.

Appendix B-4: Private Sector Coordination

The LMS works closely with member and non-member business and NGO organizations on a range of initiatives to create a more disaster resilient community and economy. Key mechanisms for this inter-sector coordination are the LMS, the Executive Committee of the Post Disaster Redevelopment program, the Business & Industry Unit (ESF18), and the Private-Public Partnership. In its third year of existence, the Private-Public Partnership has identified 31 mitigation related initiatives to pursue. Three of these initiatives, The Business Continuity Information Network (BCIN), Florida First (a banking consortium to ensure the continuity of banking services after disasters) and a private sector-driven program dubbed “First Responders First” are well along in development as of this writing.

Appendix C: Hazard & Risk Assessment Maps

Appendix C contains hazard boundary and risk assessment maps. Using county and municipal GIS capabilities, facility inventory lists and property appraiser databases, and other local, regional, state and national agency databases, the LMS is able to map any location-specific hazard risk or event and estimate associated physical and financial losses, on demand. A representative sample of hazard maps available for risk assessment, strategy development, and other mitigation planning activities are presented in the following sections of this appendix.

The maps and data in this appendix are presented in partial fulfillment of the following FEMA requirements:

Requirement §201.6(c)(2)(i): The risk assessment **shall** include a description of the type of all natural hazards that can affect the jurisdiction.

Requirement §201.6(c)(2)(i): The risk assessment **shall** include a description of the … location and extent of all natural hazards that can affect the jurisdiction. The plan **shall** include information on previous occurrences of hazard events and on the probability of future hazard events.

Requirement §201. 6(c)(2)(ii): The risk assessment **shall** include a description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.

Requirement §201.6(c)(2)(ii): The risk assessment **must** also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods.

Requirement §201.6(c)(2)(ii)(A): The plan **should** describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area.

Requirement §201.6(c)(2)(ii)(B): The plan **should** describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate.

Requirement §201.6(c)(2)(ii)(C): The plan **should** describe vulnerability in terms of providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Requirement §201.6(c)(2)(iii): For multi-jurisdictional plans, the risk assessment **must** assess each jurisdiction's risks where they vary from the risks facing the entire planning area.

Further risk assessment detail pertinent to these FEMA requirements are contained in Section 3.0**,** in Appendix A, in the Palm Beach County Hazard Environment section, and in the newly formatted, completed or nearly completed hazard write-ups.

There are three sets of maps included in this appendix. The first set of maps displays the boundaries for each specific hazard relative to municipal and county boundaries. The second set of maps depicts the type and number of critical facilities and infrastructure that would be at risk from each type of hazard. Accompanying this second set of maps are brief narrative assessments

of the risk posed by each type of hazard and a listing of critical facilities and infrastructure, by jurisdiction, at risk. Appraised property values are included to assist in estimating potential pre-disaster exposures and post-disaster dollar losses. The third set of maps included in this appendix is a representative compilation of other types of planning information available for mitigation activities.

For purposes of risk assessment, facilities were considered "critical facilities" based on their importance in delivering vital services, protecting residents, providing for the needs of special populations, and other considerations. The types of critical facilities and infrastructure presented include: schools, police and fire stations, select government buildings, nursing homes, assisted living facilities, hospitals, shelters, the Herbert Hoover Dike, Turnpike, I-95, water treatment facilities, waste water treatment facilities and airports.

Notes:

For security reasons, critical facility listings and property values are excluded from publicly distributed copies of the LMS plan.

The LMS recognizes that some loss estimates are overstated because entities share common facilities and the database has no way of splitting property value data. Planners are cautioned to consider this duplication in their risk assessments. The value of some properties is listed at $0.00. This means no property appraisal data was available in the database…not that the property has no value.

PALM BEACH COUNTY
HAZARD MAP
PRIMARY DATA SOURCES

Map	Source	Date
FIRM "A" Zones	FEMA	Oct. 2003
Historical Flood Prone Areas	South Florida Water Mgt. District	Oct. 2003
Storm Surge Areas	Army Corps of Engineers	Oct. 2003
Evacuation Zones	PBCDEM LIDAR/Army Corps of Engineers	Oct. 2003
Coastal Erosion Boundary	PBC Environmental Resources Mgt.	Oct. 2003
Hebert Hoover Dike Breach Reach	South Florida Water Mgt. District	Oct.2003
Wellfield Protection Zones	PBC Environmental Resources Mgt.	Oct. 2003
Wildland Fire Areas	Dept. Forestry/PBC Fire-Rescue	Oct. 2003
Radiological Ingestion Pathway Zone	Florida Power & Light	Oct. 2003
Muck Fire Areas	PBC Environmental Resources Mgt.	Oct. 2003
Transportation Areas	PBC Public Safety GIS	Oct. 2003
Hurricane Peak Wind Potentials	National Weather Service/National Hurricane Center	Oct. 2003
Other County-wide Hazard Threats (Tornado, Extreme Temps, etc.)	PBC Public Safety GIS	Oct. 2003
Agricultural Pests	PBC Environmental Resources Mgt.	Oct. 2003
Tsunami Buffer	Tsunami Society	Oct. 2003

INDEX OF FACILITY ABBREVIATIONS

GOV	Governmental Facility
FD	Fire Department Facility
PD	Police Department Facility
NSG	Nursing Home
ALF	Assisted Living Facility
WTP	Water Treatment/Water Control District Facility
WWTP	Waste Water Treatment Facility

PALM BEACH COUNTY
HAZARD MAPS

WITH JURISDICTIONAL BOUNDARIES

Appendix D: Incorporation into Other Planning Mechanisms

This appendix addresses the following FEMA requirement:

Requirement §201. 6(c)(4)(ii): The plan *shall* include a process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, where appropriate.

Under the direction of the LMS Steering Committee and the LMS Coordinator, the ad hoc Plan Integration Committee interfaces with appropriate governmental and non-governmental agencies and offices to ensure LMS goals, objectives, and priorities are consistent with and cross-referenced with those articulated in other existing plans. In addition the LMS will seek opportunities at the regional, county and municipal levels to:

- Update plans, policies, regulations and other directives to include hazard mitigation priorities
- Encourage the adoption of mitigation priorities within capital and operational budgets and grant applications
- Share information on grant funding opportunities
- Offer guidance for carrying out mitigation actions
- Explore opportunities for collaborative mitigation projects and initiatives

Among the principal plans with formally adopted references to the LMS are:

- Palm Beach County Comprehensive Plan (Coastal Management Element)
- Palm Beach County Comprehensive Emergency Management Plan
- Palm Beach County Post Disaster Redevelopment Plan
- Palm Beach County Strategic Economic Development Plan
- Florida Regional Catastrophic Disaster Plan (Draft)
- Treasure Coast Regional Planning Council Comprehensive Management Plan
- Palm Beach County Comprehensive Growth Management Plan

Below are references that demonstrate the relationships among the Regional and County Comprehensive Plans and the Palm Beach County Unified Local Mitigation Strategy. These relationships are further demonstrated in Appendix B. These plans work in tandem toward the shared goal of reducing damage from specific hazards. Section 3 contains a section profiling current and future land uses in each of the county's five Managed Growth Tiers.

Table D-1: Treasure Coast Regional Planning Council Comprehensive Growth Management Plan, Emergency Preparedness Element, (Dec. 1995)

Source	Page Number	Hazard
Goal 5.1	5-27	Natural and Technological Disaster Mitigation
Strategy 5.1.1	5-27	Natural and Technological Disaster Mitigation
Policy 5.1.1.1	5-27	Hurricane Mitigation
Policy 5.1.1.2	5-27	Hurricane Mitigation
Policy 5.1.1.3	5-27	Erosion Mitigation, Flood Mitigation, Hurricane Mitigation
Policy 5.1.1.4	5-28	Natural and Technological Disaster Mitigation; Post-Disaster Redevelopment
Policy 5.1.1.5	5-28	Hazardous Materials Disaster Mitigation, Wellfield Contamination Mitigation
Policy 5.1.1.6	5-28	Erosion Mitigation, Flood Mitigation, Hurricane Mitigation
Policy 5.1.1.7	5-28	Natural and Technological Disaster Mitigation
Goal 5.2	5-28	Natural and Technological Disaster Mitigation
Strategy 5.2.1	5-28	Natural and Technological Disaster Mitigation
Policy 5.2.1.1	5-28	Natural and Technological Disaster Mitigation; Post-Disaster Redevelopment
Policy 5.2.1.2	5-28	Hazardous Materials Disaster Mitigation, Wellfield Contamination Mitigation
Policy 5.2.1.3	5-29	Hurricane Mitigation
Policy 5.2.1.4	5-29	Hurricane Mitigation, Natural and Technological Disaster Mitigation
Policy 5.2.1.5	5-29	Natural and Technological Disaster Mitigation
Policy 5.2.1.6	5-29	Natural and Technological Disaster Mitigation
Policy 5.2.1.7	5-29	Hurricane Mitigation, Hazardous Materials Disaster Mitigation
Policy 5.2.1.8	5-29	Flood Mitigation
Goal 5.3	5-29	Flood Mitigation, Natural and Technological Disaster Mitigation
Strategy 5.3.1	5-30	Hurricane Mitigation
Policy 5.3.1.1	5-30	Hurricane Mitigation, Natural and Technological Disaster Mitigation
Policy 5.3.1.2	5-30	Erosion Mitigation, Flood Mitigation, Hurricane Mitigation
Policy 5.3.1.3	5-30	Hurricane Mitigation, Natural and Technological Disaster Mitigation
Policy 5.3.1.4	5-30	Hurricane Mitigation, Natural and Technological Disaster Mitigation
Policy 5.3.1.5	5-30	Hurricane Mitigation, Natural and Technological Disaster Mitigation

Source	Page Number	Hazard
Policy 5.3.1.6	5-30	Hurricane Mitigation, Natural and Technological Disaster Mitigation
Policy 5.3.1.7	5-30	Hurricane Mitigation, Natural and Technological Disaster Mitigation
Policy 5.3.1.8	5-31	Hurricane Mitigation, Natural and Technological Disaster Mitigation
Policy 5.3.1.9	5-31	Hurricane Mitigation, Natural and Technological Disaster Mitigation
Policy 5.3.1.10	5-31	Hurricane Mitigation
Goal 5.4	5-31	Natural and Technological Disaster Mitigation
Strategy 5.4.1	5-31	Natural and Technological Disaster Mitigation
Policy 5.4.1.1	5-31	Natural and Technological Disaster Mitigation
Policy 5.4.1.2	5-32	Natural and Technological Disaster Mitigation
Policy 5.4.1.3	5-32	Natural and Technological Disaster Mitigation
Policy 5.4.1.4	5-32	Natural and Technological Disaster Mitigation
Policy 5.4.1.7	5-32	Flood Mitigation, Hurricane Mitigation
Goal 5.5	5-32	Post-Disaster Redevelopment
Strategy 5.5.1	5-33	Natural and Technological Disaster Mitigation
Policy 5.5.1.1	5-33	Natural and Technological Disaster Mitigation; Post-Disaster Redevelopment
Policy 5.5.1.2	5-33	Hurricane Mitigation, Natural and Technological Disaster Mitigation
Policy 5.5.1.3	5-33	Hurricane Mitigation
Policy 5.5.1.5	5-33	Hurricane Mitigation
Policy 5.5.1.6	5-33	Hurricane Mitigation
Policy 5.5.1.7	5-33	Natural and Technological Disaster Mitigation; Post-Disaster Redevelopment
Strategy 5.5.2	5-34	Natural and Technological Disaster Mitigation; Post-Disaster Redevelopment
Policy 5.5.2.1	5-34	Post-Disaster Redevelopment
Policy 5.5.2.2	5-34	Post-Disaster Redevelopment
Policy 5.5.2.3	5-34	Post-Disaster Redevelopment
Policy 5.5.2.4	5-34	Post-Disaster Redevelopment
Policy 5.5.2.5	5-34	Post-Disaster Redevelopment

Table D-2: Palm Beach County Comprehensive Growth Management Plan (November 1997)

Plan Element	Source	Page Number	Hazards
A	Policy 1.1-h	3.0-AV	Airport Safety Mitigation
A	Policy 1.2-a	3.0-AV	Airport Safety Mitigation
A	Policy 1.2-l	5.0-AV	Airport Safety Mitigation
C	Policy 3.1-e	8.0-C	Wellfield Contamination Mitigation
C	Policy 3.1-f	9.0-C	Wellfield Contamination Mitigation
C	Policy 3.1-g	9.0-C	Wellfield Contamination Mitigation
C	Policy 3.1-h	9.0-C	Wellfield Contamination Mitigation
C	Objective 4.1	11.0-C	Air Pollution Mitigation
C	Policy 4.1-c	11.0-C	Air Pollution Mitigation
IC	Policy 5-d	14-IG	Hurricane Mitigation, Natural and Technological Disaster Mitigation
CM	Policy 1.2-c	10.0-CM	Erosion Mitigation
CM	Policy 1.2-d	10.0-CM	Erosion Mitigation
CM	Policy 1.2-e	10.0-CM	Erosion Mitigation
CM	Policy 1.2-g	10.0-CM	Erosion Mitigation
CM	Policy 1.2-h	10.0-CM	Erosion Mitigation
CM	Goal 2	12.0-CM	Erosion Mitigation, Flood Mitigation, Hurricane Mitigation
CM	Policy 2.1-c	12.0-CM	Flood Mitigation, Hurricane Mitigation
CM	Objective 2.2	12.0-CM	Erosion Mitigation, Flood Mitigation, Hurricane Mitigation
CM	Policy 2.2-a	12.0-CM	Erosion Mitigation, Flood Mitigation, Hurricane Mitigation
CM	Objective 2.3	13.0-CM	Hurricane Mitigation
CM	Policy 2.3-a	13.0-CM	Hurricane Mitigation
CM	Policy 2.3-b	13.0-CM	Hurricane Mitigation
CM	Policy 2.3-c	13.0-CM	Hurricane Mitigation
CM	Objective 2.4	13.0-CM	Natural and Technological Disaster Mitigation
CM	Policy 2.4-a	13.0-CM	Hurricane Mitigation
CM	Policy 2.4-b	13.0-CM	Hurricane Mitigation
CM	Policy 2.4-c	13.0-CM	Hurricane Mitigation
CM	Objective 2.5	14.0-CM	Natural and Technological Disaster Mitigation

Plan Element	Source	Page Number	Hazards
CM	Policy 2.5-a	14.0-CM	Natural and Technological Disaster Mitigation
CM	Policy 2.5-b	14.0-CM	Erosion Mitigation, Flood Mitigation, Hurricane Mitigation
CM	Policy 2.5-c	14.0-CM	Erosion Mitigation, Flood Mitigation, Hurricane Mitigation
CM	Policy 2.5-d	14.0-CM	Natural and Technological Disaster Mitigation
CM	Policy 2.5-e	14.0-CM	Natural and Technological Disaster Mitigation
CM	Policy 2.5-f	14.0-CM	Natural and Technological Disaster Mitigation
FLU	Policy 1.1-d	5.0-LU	
FLU	Policy 1.1-g	7.0-LU	Flood Mitigation, Wellfield Contamination Mitigation
FLU	Policy 1.1-h	7.0-LU	Flood Mitigation, Wellfield Contamination Mitigation
FLU	Policy 1.1-i	8.0-LU	Natural and Technological Disaster Mitigation
FLU	Policy 1.3-h	12.0-LU	Erosion Mitigation, Flood Mitigation, Hurricane Mitigation
FLU	Policy 1.3-i	12.0-LU	Erosion Mitigation, Flood Mitigation, Hurricane Mitigation
FLU	Policy 2.1-a	17.0-LU	Flood Mitigation, Wellfield Contamination Mitigation
FR	Goal 1	3-FR	Fire Mitigation
FR	Policy 1.1-b	3-FR	Fire Mitigation
FR	Policy 1.2-d	5-FR	Fire Mitigation
FR	Policy 1.2-f	5-FR	Fire Mitigation
FR	Policy 1.4-c	6-FR	Fire Mitigation
FR	Policy 1.4-d	6-FR	Fire Mitigation
HH	Policy 6-b	8-HS	Natural and Technological Disaster Mitigation
I	Objective 1.7	12.0-UT	Wellfield Contamination Mitigation
I	Policy 1.7-a	11.0-WS	
I	Policy 1.7-b	11.0-WS	Hazardous Materials Disaster Mitigation, Hurricane Mitigation, Wellfield Contamination Mitigation
I	Policy 1.7-c	12.0-WS	Natural and Technological Disaster Mitigation
I	Goal 2	13.0-WS	Drought Mitigation, Wellfield Contamination Mitigation
I	Objective 2.1	13.0-WS	Drought Mitigation
I	Policy	13.0-WS	Drought Mitigation
I	Policy 2.1-b	14.0-WS	Drought Mitigation
I	Policy 2.1-c	14.0-WS	Drought Mitigation
I	Policy 2.1-d	14.0-WS	Drought Mitigation

Plan Element	Source	Page Number	Hazards
I	Policy 2.1-e	14.0-WS	Drought Mitigation
I	Policy 2.1-f	14.0-WS	Drought Mitigation
I	Policy 2.1-g	15.0-WS	Drought Mitigation
I	Policy 2.1-h	15.0-WS	Drought Mitigation
I	Policy 2.1-i	15.0-WS	Drought Mitigation
I	Objective 2.2	15.0-WS	Wellfield Contamination Mitigation
I	Policy 2.2-a	15.0-WS	Wellfield Contamination Mitigation
I	Policy 2.2-b	15.0-WS	Wellfield Contamination Mitigation
I	Goal 1	4.0-SM	Flood Mitigation
I	Objective 1.1	4.0-SM	Flood Mitigation
I	Policy 1.1-a	4.0-SM	Flood Mitigation
I	Policy 1.1-b	4.0-SM	Flood Mitigation
I	Policy 1.1-c	4.0-SM	Flood Mitigation
I	Policy 1.1-d	4.0-SM	Flood Mitigation
I	Objective 1.2	6.0-SM	Flood Mitigation
I	Policy 1.2-a	6.0-SM	Flood Mitigation
I	Policy 1.2-b	6.0-SM	Flood Mitigation
I	Objective 3.2	7.0-SM	Flood Mitigation
I	Policy 3.2-a	7.0-SM	Flood Mitigation
I	Policy 3.2-b	7.0-SM	Flood Mitigation
T	Policy 1.16-j	46.0-TE	Natural and Technological Disaster Mitigation
T	Policy 1.17-a	46.0-TE	Natural and Technological Disaster Mitigation

A = Aviation Element
C = Conservation Element
CM = Coastal Management Element
FLU = Future Land Use Element
FR = Fire Rescue Element
HH = Health and Human Services Element
I = Infrastructure Element
IC = Intergovernmental Coordination Element
T = Transportation Element

Note: Only the above referenced elements in this Comprehensive Growth Management Plan contain hazard mitigation initiatives.

Table D-3: Comprehensive Growth Management Plan, Hazard Mitigation Inventory

Municipality	Comprehensive Growth Management Plan Elements									
	Capital Improvements	Coastal Management	Conservation	Fire Rescue	Future Land Use	Housing	Infrastructure	Intergovernmental Coordination	Transportation	Recreation and Open Space
Atlantis	NT		A,D,F,HZ,W		F,W		D,F,HZ,W	D,F,HZ,NT,W		F,W
Belle Glade	NT		A,D,F,HZ		F,W		D,F,HZ,NT,W			
Boca Raton	E,F,H	D,E,F,H,HZ, NT,P	A,D,E,H,HZ,NT W		E,F,H,HZ,W	H,F	D,F,W	D,E,F,H,NT,P,W		D,E,F
Boynton Beach	D,E,F,H	E,F,H,NT,P	A,D,F,HZ		F,H,HZ,NT,W		D,F,HZ,W	H,HZ,NT,P		
Briny Breezes	F,NT	E,F,H,P	D,HZ		F,H,W		D,F			
Cloud Lake	F,NT,W		A,D,E,F,W		D,H,HZ,F,W	F	D,F,W	D,H,NT,F,HZ,W		W,E,F
Delray Beach	F,NT,H,P	E,F,FI,H,NT,P	A,D,E,H,HZ,W	F,H,P	F	F	D,F,HZ,W		NT	
Glen Ridge	NT		A,D,E,F		D,E,F,H,HZ,P	F	D,E,FFI,HZ,, NT	F,NT		D,F,H,P
Golf			A,D,HZ,W		F,W		D,F,W			
Greenacres			A,D,E,F,W		D,E,F,W		D,F,W	D,F		
Gulfstream	E,F,H,NT	E,F,H,HZ, NT,P,W	A,D,F,W		F,H,W		D,F,FI,HZ,NT, W			
Haverhill	NT		A,D,W		NT,W		D,F,HZ	NT		
Highland Beach		A,E,F,H,HZ,NT ,P,W	A,E,F,H,HZ,NT ,P,W		D,F,H,NT		D,F			
Hypoluxo	F	F,H,NT,P,W	A,F,H,NT,P,W				F,W			
Juno Beach	E,F,H,NT	E,F,H,NT,P,W	HZ,W		E,F,H,NT,W		D,F	NT		
Jupiter	NT,E,F,H	E,F,H,N,NT,P	A,D,E,F,HZ,W		F,H,HZ,W		W,D,F,HZ	W,HZ,D,H	H	H,F
Jupiter Inlet Colony	E,F,H,NT	E,F,H,NT,P	D		D,F		D,F,HZ,NT	D		
Lake Clark Shores	NT		A,D,F,HZ,W		D,F,H,W		F	D,F,W		

Municipality	Comprehensive Growth Management Plan Elements									
	Capital Improvements	Coastal Management	Conservation	Fire Rescue	Future Land Use	Housing	Infrastructure	Intergovernmental Coordination	Transportation	Recreation and Open Space
Lake Park	E,F,H,NT	E,F,H,NT,P	A,D,F		F,W		D,F,HZ,NT,W	F,NT,W		
Lake Worth	E,F,H,NT	D,E,F,H,HZ, NT,P	A,D,HZ		E,F,H,HZ,NT,W	F,H	D,F,HZ,W	D,F		
Lantana	F,	E,P	HZ		P,H,		F			
Loxahatchee Groves	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Manalapan	F,W	E,P	D		P,H,W		D,F,W			
Mangonia Park			H,E,A,D,F,HZ, W,P		F,W					
North Palm Beach	E,F,H,NT,P	E,F,H,P	A,D		F,HZ,W		D,F,NT,W	NT		
Ocean Ridge	F,H	H,P	A,D		F,H,W		D,F,FI,HZ			
Pahokee	NT		A,D,F,HZ,W		F,HZ,W		F	F		
Palm Beach	E,F,H,NT	E			A,E,F,H,P		F			
Palm Beach Gardens		E,F,H,NT,P	A,D,F,NT,W	NT	E,F,H,NT,W		A,D, F,HZ,W			
Palm Beach Shores	F	E,F,H,HZ, NT,P	A,D,HZ,W		E,F,H,NT		D,F,W	E,F,H,NT		
Palm Springs	D,F,NT		FI,A,D,HZ,W,E		F,W		E,D,F,FI,W	F,NT		F
Riviera Beach	E,F,H,NT	E,F,H,P	A,D,F,HZ,W		F,H,W		D,F,W	F,FI,H,P		
Royal Palm Beach			A,D,F,HZ,W		F,W		D,FI,HZ,NT			
South Bay			A		F,W		D,F,NT,W			
South Palm Beach	E,F,H	E,F,H,NT,P	A,D,F,HZ		E,F,H		D,F,HZ	NT		
Tequesta	E,F,H,NT,P	E,F,H,HZ, NT, P	A,D,E,F,H, HZ		E,F,H,W		D,F,FI,W			
Wellington	NT		A,D,F,W		F,HZ,W		D,F,NT	D,F,H		

Municipality	Comprehensive Growth Management Plan Elements									
	Capital Improvements	Coastal Management	Conservation	Fire Rescue	Future Land Use	Housing	Infrastructure	Intergovernmental Coordination	Transportation	Recreation and Open Space
West Palm Beach	E,F,FI,H,W	D,E,F,H,NT,P	A,D,F,HZ,NT, W		D,E,F,H,NT,P,W		D,E,F,FI,HZ, W	F,HZ,NT,W		W

A = Air Pollution Mitigation
D = Drought Mitigation
E = Erosion Mitigation
F = Flood Mitigation
FI = Fire Mitigation
H = Hurricane Mitigation
HZ = Hazardous Materials Disaster Mitigation
N = Nuclear Disaster Mitigation
NT = Natural and Technological Disaster Mitigation
P = Post-Disaster Redevelopment
TBD = To Be Determined
W = Wellfield Contamination Mitigation

Note: Only the above referenced elements in these Comprehensive Growth Management Plans contain hazard mitigation initiatives.

Table D-4: Existing Hazard Mitigation Projects and Programs

Codes, Projects & Programs	MUNICIPALITIES																																					
	Unincorporated County	Atlantis, City of	Belle Glade, City of	Boca Raton, City of	Boynton Beach, City of	Briny Breezes, Town of	Cloud Lake, Town of	Delray Beach, City of	Glen Ridge, Town of	Golf, Village of	Greenacres, City of	Gulf Stream, Town of	Haverhill, Town of	Highland Beach, Town of	Hypoluxo, Town of	Juno Beach, Town of	Jupiter, Town of	Jupiter Inlet Colony, Town of	Lake Clark Shores, Town of	Lake Park, Town of	Lake Worth, City of	Lantana, Town of	Manalapan, Town of	Mangonia Park, Town of	North Palm Beach, Village of	Ocean Ridge, Town of	Pahokee, City of	Palm Beach, Town of	Palm Beach Gardens,City of	Palm Beach Shores, Town of	Palm Springs, Village of	Riviera Beach, City of	Royal Palm Beach, Village of	South Bay, City of	South Palm Beach, City of	Tequesta, Village of	Wellington, Village of	West Palm Beach, City of
Hazards-specific Building Codes	√	√		√	√	√	√	√	√	√	√	√	√	√	√		√	√	√		√	√	√	√	√	√		√	√	√	√	√	√		√			√
Tax Incentives for Mitigation	√							√		√							√						√					√	√			√						
Public Information Campaigns	√		√	√	√	√	√	√	√	√	√	√	√		√		√	√	√		√	√	√	√		√		√	√	√	√	√	√	√		√		√
Preparedness Training	√	√	√	√	√		√	√	√	√	√	√	√	√		√	√	√	√		√	√	√	√		√		√	√	√	√	√	√		√	√	√
Professional Training	√		√	√	√		√	√	√	√	√	√	√	√		√		√	√	√	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√
Acquisition of Property	√			√	√			√	√		√									√																		
Retrofitting of Public Facilities	√	√		√	√		√	√	√		√	√	√	√	√	√			√	√	√	√	√	√	√	√	√	√	√		√	√	√		√	√	√
Structural Hazard Control	√			√	√		√	√	√					√			√			√	√	√	√	√	√			√	√	√		√	√			√	√	√
• Stormwater Drainage	√			√	√		√	√	√		√		√	√			√	√		√	√	√	√	√		√			√	√	√		√	√			√		√
• Storm-related Erosion	√			√			√	√	√				√				√			√			√	√	√	√			√	√	√						√		√
Warning Systems	√	√		√	√	√	√	√	√	√			√			√		√	√	√	√	√	√	√		√			√					√				

Table D-4: Existing hazard mitigation projects and programs

Codes, Projects & Programs	MUNICIPALITIES																																				
	Unincorporated County	Atlantis, City of	Belle Glade, City of	Boca Raton, City of	Boynton Beach, City of	Briny Breezes, Town of	Cloud Lake, Town of	Delray Beach, City of	Glen Ridge, Town of	Golf, Village of	Greenacres, City of	Gulf Stream, Town of	Haverhill, Town of	Highland Beach, Town of	Hypoluxo, Town of	Juno Beach, Town of	Jupiter, Town of	Jupiter Inlet Colony, Town	Lake Clark Shores, Town	Lake Park, Town of	Lake Worth, City of	Lantana, Town of	Manalapan, Town of	Mangonia Park, Town of	North Palm Beach, Village	Ocean Ridge, Town of	Pahokee, City of	Palm Beach, Town of	Palm Beach Gardens,City	Palm Beach Shores, Town	Palm Springs, Village of	Riviera Beach, City of	Royal Palm Beach, Village	South Bay, City of	South Palm Beach, City	Tequesta, Village of	Wellington, Village of	West Palm Beach, City of
Maintenance Programs	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√		√	√	√
• Stormwater Drainage	√	√	√	√	√		√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√		√	√	√	√	√	√		√	√	√
• Tree Trimming	√	√		√		√	√		√		√	√	√		√	√		√	√		√			√		√		√	√	√	√				√	√
• General Litter Removal	√	√	√	√		√	√	√	√		√	√	√		√	√		√	√	√		√		√		√		√	√	√	√		√			√
Hazardous Materials Management	√			√	√			√	√		√				√				√			√		√						√				√		√
Emergency Operations Plan	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
Post- Disaster Recovery Plan	√			√		√	√	√	√	√	√			√		√	√		√		√	√	√	√	√	√			√	√	√	√			√		√
Dune Protection	√			√				√								√					√	√			√		√		√		√				√		
Flood Damage Ordinance	√			√	√		√	√	√		√								√		√	√	√	√	√		√	√		√					√		√
Storm Drainage	√		√	√	√		√	√	√		√	√	√			√		√	√	√				√	√		√	√	√		√	√			√		√

Table D-4: Existing hazard mitigation projects and programs

CURRENT & FUTURE LAND USES

At 2,023 square miles, Palm Beach County is geographically one of the largest of Florida's 67 counties and has unquestionably been the fastest growing. During the 1990's, its population increased by 31 percent.

In the late 1990's, Palm Beach County received negative press as one of the worst sprawl-threatened areas in the nation. In the span of just over two years, County planners responded by producing an innovative, "award-winning" Managed Growth Tier System as a key component of the County's Future Land Use Element (FLUE).

Future Land Use Element (FLUE)

The Future Land Use Element is the nucleus of County Comprehensive Plans. It defines the components of the community and the interrelationship among them, integrating the complex relationship between land use and all of the other elements of the plan that address the physical, social and economic needs of the people who live, work and visit Palm Beach County. FLUE institutes the framework for growth management and land planning in Palm Beach County.

The intent of the FLUE is to guide the location, type, intensity and form of various types of development patterns that respect the characteristics of a particular area. This is needed to ensure development and maintenance of sustainable communities through smart growth practices which protect natural resources, prevent urban sprawl so that land, facilities, and services are used efficiently, and provide for the appropriate distribution and arrangement of land uses. These factors will facilitate balancing the physical, social, cultural, environmental and economic needs of both current residents and future citizens and create and maintain livable communities.

FLUE was originally created and has been updated based on input from the public and agencies through citizen advisory committees, public meetings, interdepartmental reviews, and the Board of County Commissioners. The following directions and priorities resulted from this process:

- Livable communities
- Growth management
- Infill development
- Land use compatibility
- Neighborhood integrity
- Economic diversity and prosperity
- Housing opportunity
- Economic activity centers
- Level of service standards
- Linear open space and park systems
- Environmental integrity
- Design
- Sense of Community
- Separation of negative externalities

Five broad principles guide Palm Beach County's sustained land use planning and development efforts:

1. Conserve and protect natural and man-made resources, and restore and maintain key ecosystems to provide adequate supplies of clean and safe water for natural, human and economic systems.

2. Prevent urban sprawl through establishment of urban development areas, and encourage urban revitalization and redevelopment.

3. Provide for sufficient open space to protect wildlife, and provide natural and recreational areas for public use.

4. Create quality livable communities and their associated lifestyle choices, and improve the quality of life through better housing, recreational, and cultural opportunities for all.

5. Manage the development of land and service delivery, so that its use is appropriate, orderly, timely and cost effective.

The main components of the FLUE are the County directions, goals, objectives, and policies, the Managed Growth Tier Map (a copy is contained in the miscellaneous map section of Appendix C), and the Future Land Use Atlas (a copy of the Future Land Use Map is also contained in the miscellaneous map section of Appendix C).

Managed Growth Tier System

The Managed Growth Tier System is a growth management tool that recognizes the diverse communities within the county that share common characteristics. Each of these communities requires specific strategies and policies to create and maintain quality livable communities respecting the lifestyle choices for current residents, future generations, and visitors. The purpose of the system is to provide strategies to protect viable existing neighborhoods and communities and promote the enhancement of areas in need of assistance.

In addition, these strategies are intended to direct the location and timing of future development to:

- Ensure sufficient land, facilities and services are available to maintain a variety of housing and lifestyle choices, including urban, suburban, exurban and rural living;

- Preserve, protect, and improve the quality of natural resources, environmentally sensitive lands and systems by guiding the location, type, intensity and form of development;

- Accommodate future growth but inhibit further urban sprawl by requiring the use of compact forms of sustainable development;

- Enhance existing communities to improve or maintain livability, character, mobility, and identity;

- Facilitate and support infill development and revitalization and redevelopment activity through coordinated service delivery and infrastructure upgrades;

- Protect agricultural land for farm users, including equestrian uses;

- Strengthen and diversify the County's economic base to satisfy the demands of the population for employment growth, and provide opportunities for agricultural operations and employment centers; and

- Provide development timing and phasing mechanism in order to prioritize the delivery of adequate facilities and services to correct deficiencies in existing communities and accommodate growth in a timely and cost effective manner.

Current & Future Land Uses & the Location / Characteristics of Palm Beach County's Managed Growth Tiers

Palm Beach County's Future Land Use Element recognizes and defines the following Managed Growth Tiers:

Urban/Suburban Tier

This tier is expected to accommodate the bulk of the population and its need for employment, goods and services, cultural opportunities, and recreation. It supports a variety of lifestyle choices, ranging from urban to residential estate; however, the predominant development form is suburban in character. The older, established communities are primarily in municipalities within approximately two miles of the Atlantic Ocean. Most of the neighborhoods within the tier are stable and support viable communities. Among the key priorities for this tier is ensuring that land, services and facilities are used effectively, efficiently and safely.

Exurban Tier

The Exurban Tier lies between the Urban and Rural Tiers and supports residential subdivisions, created prior to 1970 before adoption of the Comprehensive Plan. Historically, these areas have been considered rural due to a sparse development pattern, large heavily treed lots, presence of small agricultural operations including equestrian uses, and a desire for minimal services and regulation. However, growth has marked a change in the character from rural to more suburban and semi-rural, or exurban, as the existing and vested 1.25 acre lots develop with single family homes. The corresponding increase in population has caused an escalating increase in the demand for services.

Rural Tier

The Rural Tier includes agricultural land and rural settlements that range in density from primarily 1 dwelling unit per 5 acres to 1 dwelling unit per 20 acres. This tier is primarily located outside the Urban Service Area and east of the Water Conservation Areas, Twenty Mile Bend and the J.W. Corbett Wildlife Management Area. These areas support large agricultural operations as well as single family homes with small family-owned agricultural businesses, including equestrian related uses. Due to the declining availability of land and the increase in population in the Urban and Exurban Tiers, The Rural Tier is beginning to experience pressure for urban densities and non-residential intensities normally associated with a more urban area. Land use strategies in this tier

emphasize protecting and enhancing rural settlements that support agricultural and equestrian uses.

Agricultural Reserve Tier

The Agricultural Reserve area includes portions of the county that encompass unique farmland and wetlands. Strategies for this tier emphasize protection of farmlands and perpetuation of agriculture through a combination of public action and private development.

Glades Tier

The Glades Tier is generally located west of the Conservation Areas and Twenty Mile Bend, and includes the Glades communities. This area is designated primarily for specialized agricultural operations. Communities within the Glades Tier are engaged in their own efforts with regard to planning and development. This effort is mainly in the form of economic development programming. The geographic distance and the nature of the issues faced by the Glades communities differ from the challenges faced by the coastal communities to manage growth. These factors warrant special strategies.

Detailed information on future land use and growth management issues within the County can be found in the Comprehensive Plans of the County and municipalities. A county-wide future land use map and a map of the Managed Growth Tier areas are contained in the miscellaneous map section of Appendix C and are available online through the Palm Beach County Planning Department website.

Future Land Use & The LMS

The Future Land Use Element of the Comprehensive Plan and the characteristics of the Managed Growth Tiers offer important inputs for formulating and implementing mitigation strategies and plans. The LMS committee structure will seek to increase and enhance the involvement of county and municipal planners and consultants in the mitigation strategy development and project planning processes. At the same time, the LMS will seek to ensure that hazard threats and mitigation options are appropriately considered at all levels in future land use and growth management plans and decisions.

Appendix E: Prioritized Project Lists

Appendix E contains the latest update of Palm Beach County's LMS Prioritized Project List (PPL). The list of projects is ever changing as projects completed through self-funding or with grant assistance are dropped and new proposed and planned projects are added. Jurisdictions and other potential project sponsors, particularly those not having projects on the current list, are encouraged to submit projects. The expectation is that all potential applicants be represented on the PPL with projects that address identified local hazards, vulnerabilities, and mitigation strategies. As municipalities complete projects they will be encouraged to submit new ones. At any given time a few communities will not have listed projects.

The appendix satisfies, in part, the following FEMA requirements:

Requirement: §201.6(c)(3)(iii): [The mitigation strategy section shall include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Requirement §201. 6(c)(3)(ii): [The mitigation strategy shall include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Requirement: §201. 6(c)(3)(ii): [The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

Other sections and appendices addressing these requirements include appendices F, G, and J and Section 3 and Section 5.

About the Prioritized Project List (PPL)

Normally the PPL is updated twice a year... in the Spring and in the Fall. Projects are added, deleted, modified, scored, and ranked in accordance with the procedures described in Section 5.

During the period 2004 to 2009, however, Palm Beach County experienced a number of weather events that resulted in four federal declarations and several SBA declarations. These events included three hurricanes, two tropical storms (one declared), and an extended drought. Logically, the mitigation project focus over this period was almost exclusively on developing and submitting HMGP-specific drainage improvement and wind retrofit projects. A total of 64 projects, valued at $37,532,416 were developed and coordinated through the LMS. Several dozen other projects were developed, but were withdrawn when they were deemed ineligible under HMGP guidelines.

The process and criteria used to rank projects are described in detail in Section 5. The current criteria emphasize: “community benefit” (Does the project promise tangible benefits to the community?); “project benefit” (Does the project address critical elements of the community infrastructure?); “community exposure” (Does the project mitigate an identified hazard to which the community is particularly vulnerable?); “cost effectiveness” (Does the project meet or exceed the thresholds of benefit to cost ratios using accepted methodologies?); “community commitment” (Is the project consistent with or incorporated in other plans, including COMP plans, CEMPs?); “public support” (Is there demonstrated public support for the project?); and “project implementation considerations” (What further is required to accomplish implementation?

The feasibility and benefits of ranking “like” projects rather than forcing a single list of highly dissimilar projects has been discussed by the LMS Evaluation Panel and will continue to be explored.

In 2004 the PPL format and content were expanded and modified to include the following information:

- Rank position number
- Project control number
- Project applicant/sponsor
- Final score
- Project description
- Estimated project cost
- Potential funding source(s)
- Potential time frame for funding
- Benefit-cost, technical feasibility, environmental status (as available)
- Key referencing separate expanded narrative analyzing how the project will reduce the effects of future hazard events on new/existing buildings

The above format will be reevaluated when plan enhancements are considered.

Recognizing that many worthy projects that have benefits that are difficult to quantify are disadvantaged by the current FEMA benefit-cost methodologies, the LMS Steering Committee is also considering the feasibility of maintaining two prioritized project lists...one for projects earmarked for assistance funding under the Pre Disaster Mitigation, Hazard Mitigation Grant Program, and Flood Mitigation Assistance programs, and one for projects that might qualify for funding assistance under alternative non-federal grant programs. Regardless of funding intentions, all project applicants are encouraged to calculate benefit-costs whether or not they meet FEMA’s threshold for submission.

The current procedure for prioritizing projects will be retained until any enhancements are fully developed, deemed acceptable under the rules of LMS by FEMA and the Florida Department of Community Affairs, and adopted by the LMS Steering Committee.

Hazard Mitigation Grant Program Prioritization

The reader will note that there are multiple prioritized project lists contained in this section. A lesson learned from recent hurricane events was that the overall Prioritized Project List contains many projects that could never be funded under the guidelines of

federal mitigation assistance programs. In 2004 Palm Beach County received sizeable allocations of HMGP funds in response to losses suffered from Hurricanes Frances and Jeanne. Given HMGP's narrow preference for wind retrofit and drainage improvement projects, a special request for eligible project applications was initiated. In consultation with the Evaluation Panel and the Administrative Committee the decision was made to submit all submitted hardening and wind retrofit projects for State and FEMA consideration. A set of special criteria were developed and administered by the LMS Flood Mitigation Technical Advisory Committee for the prioritization of drainage improvement projects for submission to the State and FEMA. These included: LMS rank (if on the current list), cost-benefit ratios, risk to lives, size of population impacted, geographic area benefited, loss of function considerations, duration of impacts, frequency of flooding, cost of losses, relationship to other flood mitigation projects, technical feasibility, readiness to implement, cost as a percentage of the HMGP allocation. The intent was to get the optimum community benefit for the dollar.

A similar process was followed in 2005 when the county was allocated HMGP funds in response to losses suffered from Hurricane Wilma. In late 2008 Palm Beach County received an HMGP allocation for losses from Tropical Storm Fay. The Steering Committee opted to follow the standard scoring and ranking procedure for the later wave of applications.

The remainder of this section contains:

The LMS Prioritized Project List updated as of January 2009
The HMGP Prioritized Project List for Hurricane Frances (FEMA-1545-DR-FL)
The HMGP Prioritized Project List for Hurricane Jeanne (FEMA-1561-DR-FL)
The HMGP Prioritized Project List for Hurricane Wilma (FEMA-1609-DR-FL)
The HMGP Prioritized Project List for Tropical Storm Fay (FEMA-1785-DR-FL)

The Prioritized Project List of the Flood Mitigation Technical Advisory Committee/ Stub Canal Task Force a list of task force members

PALM BEACH COUNTY
LMS PRIORITIZED PROJECT LIST
(January 2009)

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Rank	Local Score	B-C/TF/ES FEMA Qualified *	Control #	Municipality/ Applicant	Project Description	Potential Funding Sources*	Time Frame*	Evaluation Narrative*	Cost ($)
1	81.133	NA	99F055	Glen Ridge, Town of	Drainage; Retrofit two system drainage structures to reduce flooding	P,B	UF	TBA	22,000
2	78.10	NA	00S030	PBC DEM	Shelter Retrofit	P,A	UF	TBA	1,758,000
3	77.983	NA	99F056	Glen Ridge, Town of	Drainage; Purchase of single family resident for access and control of drainage easements	P,B	UF	TBA	75,000
4	76.90	NA	00S031	Delray Beach, City of	Sanitary Rehabilitation Program	P,B	UF	TBA	750,000
5	76.00	NA	00F001	Pahokee	Shutters for City hall	P,A	UF	TBA	28,257
6	75.167	NA	01S011	West Palm Beach	Drainage improvements, Park Ave.	P,B	UF	TBA	935,200
7	74.7	NA	99F044	Could Lake, Town of	Installation of 2 flap gates at outfall discharge stub canal, and one slide gate at intake	P,B	UF	TBA	15,000
8	74.55	NA	99F047	Cloud Lake, Town of	Dredge existing storm water retention ponds	P,B	UF	TBA	120,000
9	74.2	NA	99F003	Boca Raton, City of	Comprehensive emergency management plan development	P,X, ,All	UF	TBA	20,000
10	73.667	NA	01S008	West Palm Beach	Drainage improvements, Lakewood Road	P,B	UF	TBA	3,148,300
11	72.483	NA	99F083	Lake Park, Town of	Impact resistant windows and generator at Public Works/EOC complex	P,A	UF	TBA	75,000
12	72.067	NA	99F036	Briny Breezes, Town of	Generator, emergency (purchase two) to operate sewer lift stations during 29power outage	P,X,M, All	UF	TBA	25,000
13	71.533	NA	99F102	Sheriff's Office, Palm Beach County	Communications: Purchase components and assemble emergency mobile antenna/repeater system to restore countywide communications in aftermath of a disaster.	P,X,Q, All	UF	TBA	30,000
14	71.3	NA	99F065	Indian Trail Improvement	Dredging: Reshape banks, remove exotic vegetation and dredge M-1 canal	P,B	UF	TBA	200,000

				District & Village of Royal Palm Beach					
15	71.067	NA	99F093	Lake Park, Town of	Drainage: Reconstruction of Lake Shore Drive to improve drainage, minimize flooding, and allow emergency vehicle access	P,B	UF	TBA	3,500
16	70.75	NA	00S014	Juno Beach	Drainage System development on US 1	P,B	UF	TBA	700,000
17	70.50	NA	01S009	West Palm Beach	Drainage improvements on Spruce Street	P,B	UF	TBA	1,472,400
18	69.733	NA	99F094	Lake Park, Town of	Drainage improvements; Town-wide storm water improvements, Drainage easement acquisition	P,B	UF	TBA	10,000,000
19	69.633	NA	99F112	Palm Beach County	Storm sewer system modification to enable system to handle storm water runoff, and acquire retention area	P,B	UF	TBA	50,000
20	69.45	NA	99F010	Boca Raton	Equipment and labor to enable EOC staff to broadcast public information via cable TV	P,X,Q, ,All	UF	TBA	25,000
21	68.567	NA	99F106	Palm Beach County	Storm Sewer system installation	P,B	UF	TBA	102,000
22	68.533	NA	99F046	Cloud Lake, Town of	Erosion control and shoreline vegetation – development of outreach/awareness efforts	P,G,X ,All	UF	TBA	5,000
23	68.517	NA	99F116	Palm Beach Gardens Fire Rescue	Emergency response team program for community citizens	P,X, ,All	UF	TBA	30,000
24	68.383	NA	99F114	Palm Beach County	Storm sewer system establishment to divert storm water runoff to an existing outfall, to alleviate flooding of residences	P,B	UF	TBA	200,000
25	68.233	NA	99F063	Haverhill, Town of	Storm drainage improvement	P,B	UF	TBA	250,000
26	68.0	NA	99F058	Gulf Stream, Town of	Waste water treatment system construction for 340 connections, including 1 school and 2 primary public facilities	P,B	UF	TBA	6,200,000
27	67.60	NA	00S036	Delray Beach, City of	Swale reconstruction	P,B	UF	TBA	85,000

28	67.00	NA	00S015	Solid Waste Authority	Debris Management Program	P,X, All	UF	TBA	150,000
29	66.833	NA	01S012	West Palm Beach	Storm water infrastructure – Edmore Road	P,B	UF	TBA	2,298,500
30	66.8	NA	99F111	Palm Beach County Water Utilities Department	Water and Sewer: Construction of less vulnerable force main on a pipe over the L-38 Canal in Delray Beach	P,B	UF	TBA	100,000
31	64.467	NA	99F005	Boca Raton, City of	Public Education: Direct and produce emergency preparedness videos for public and staff education	P,X, All	UF	TBA	22,000
32	64.3	NA	99F107	Palm Beach County	Storm sewer system installation to alleviate flooding	P,B	UF	TBA	107,500
33	64.083	NA	99F038	Cloud Lake, Town of	Generator: Purchase and installation of emergency generator for Town Hall and for town drainage facility	P,X, All	UF	TBA	10,000
34	63.7	NA	99F037	Cloud Lake, Town of	Inlet installation to relieve ponding of water on roadway	P,B	UF	TBA	32,000
35	63.55	NA	99F091	Lake Park, Town of	Accordion shutters and doors for Town Hall	P,A,	UF	TBA	130,000
36	63.133	NA	99F105	Palm Beach County	Storm sewer system installation	P,B	UF	TBA	170,000
37	62.55	NA	99F133	West Palm Beach Police Department	Retrofit windows for the Police Department with an advanced window glazing system	P,A	UF	TBA	178,000
38	62.283	NA	99F062	Haverhill, Town of	Emergency Management Plan (comprehensive development)	P,X, All	UF	TBA	15,000
39	61.783	NA	99F043	Cloud Lake, Town of	Land purchase: purchase of land that town drainage pump is on to insure continuous flood protection	P,B	UF	TBA	35,000
40	61.633	NA	99F108	Palm Beach County	Drainage: Replace canal with pipe	P,B	UF	TBA	800,000
41	61.067	NA	99F121	Royal Palm Beach, Village	Removal: Clear canal banks of Australian Pines to prevent tress from damaging/clogging canals	P,B	UF	TBA	1,900,000
42	60.083	NA	99F084	Lake Park, Town of	Harden town library with accordion shutters, generator, hardened roof	P,A	UF	TBA	100,000

43	59.867	NA	99F092	Lake Park, Town of	Construct breakwater at marina and install generator	P,B,G	UF	TBA	2,500,000
44	59.383	NA	99F086	Lake Park, Town of	Equipment purchase for hazardous materials spills and train accident response	P,N,X	UF	TBA	400,000
45	58.40	NA	00S002	Greenacres, City of	Roof Public Safety	P,A	UF	TBA	550,000
46	56.817	NA	99F059	Gulf Stream, Town of	Electrical cable, 3 miles length	P,X,,All	UF	TBA	4,500,000
47	56.4	NA	01F007	Juno Beach, Town of	Purchase 18 vacant lots – restore wetlands	P,B	UF	TBA	430,000
48	54.933	NA	99F100	Lake Worth, City of	Purchase of two structures on repetitive loss property, clear the land and construct a retention pond	P,B	UF	TBA	160,000
49	54.533	NA	99F045	Cloud Lake, Town of	Photographic documentation of all properties and critical facilities to aid in damage assistance	P,X, All	UF	TBA	2,000
50	54.15	NA	99F022	Boca Raton, City of	Install tie down straps and bolts to replace defective structural members, and replace defective decking and handrails	P,A	UF	TBA	85,000
51	54.133	NA	99F025	Boca Raton, City of	Install tie down straps and bolts to replace defective structural members, and replace defective decking and handrails	P,A	UF	TBA	250,000
52	53.67	NA	99F110	Palm Beach County	Mitigation: Increase the size of culvert to accommodate increased runoff and reduce flooding	P,B	UF	TBA	175,000
53	52.8	NA	99F103	Palm Beach County	Mitigation: Replace existing culvert with a larger one to provide better drainage	P,B	UF	TBA	140,000
54	52.8	NA	99F115	Palm Beach County	Storm sewer deficiency correction in the existing storm sewer	P,B	UF	TBA	200,000
55	52.6	NA	99F032	Boca Raton, City of	Beach renourishment	P,G,	UF	TBA	10,000,000
56	52.10	NA	00S028	Lantana, Town of	Storm Outfall improvement	P,B	UF	TBA	22,500
57	51.70	NA	00S025	Manalapan	Elevation; State Road A1A	P,A	UF	TBA	6,000,000
58	51.65	NA	99F132	West Palm Beach, City of	Drainage structures - additional installation, regrade swales, and construct new curbs and gutters	P,B	UF	TBA	500,000

59	51.50	NA	00S029	Lantana, Town of	Seawall Restoration	P,B,G	UF	TBA	18,940
60	49.75	NA	99F020	Boca Raton, City of	Tie down strap installation and bolts to replace defective structural members	P,A	UF	TBA	75,000
61	49.067	NA	99F098	Lake Worth, City of	Water main installation (12") on 2nd Ave N. to improve fire fighting capability	P,X, All	UF	TBA	500,000
62	49.05	NA	99F113	Palm Beach County	Storm Sewer system modification to enable it to handle storm water runoff	P,B	UF	TBA	100,000
63	48.8	NA	99F109	Palm Beach County	Storm Sewer system establishment along road west of Loxahatchee River Road	P,B	UF	TBA	100,000
64	47.367	NA	99F027	Boca Raton, City of	GIS application development to better manage the city's water, sewer and storm sewer systems	P,X, All	UF	TBA	500,000
65	46.95	NA	99F117	Panther Park Student Housing	Retrofit student housing	P,A	UF	TBA	180,000
66	45.95	NA	99F008	Boca Raton, City of	Business contingency planning initiative private/public	P,X, All	UF	TBA	25,000
67	45.20	NA	00S027	Lantana, Town of	Shelter; EOC & Resident	P,A	UF	TBA	1,250,000
68	45.00 (Tie break)	NA	01S001	Boca Raton, City of	Remove Australian Pines	P,A,X	UF	TBA	40,000
69	44.817	NA	99F057	Glen Ridge, Town of	Shutter senior citizen's home	P,A	UF	TBA	3,000
70	44.50	NA	00S010	Palm Springs, Village of	Harden Village hall for shelter	P,A	UF	TBA	140,000
71	44.10	NA	00S026	Lantana, Town of	Generator Retrofit for EOC	P,X,M,Q	UF	TBA	10,000
72	43.683	NA	99F082	Lake Park, Town of	Comprehensive Emergency Management Plan Development	P,X, All	UF	TBA	20,000
73	41.50	NA	01S002	Palm Beach Shores, Town of	Bury power lines	P,A,Q	UF	TBA	N/A

74	40.917	NA	02S003	Greenacres, City of	Rescue tools & equipment for emergency rescue/recovery personnel	P,X, All	UF	TBA	66,568
75	40.8	NA	99F104	Palm Beach County	Drainage System: establish formal drainage system for Seminole Colony	P,B	UF	TBA	1,310,000
76	36.95	NA	99F029	Boca Raton, City of	Develop one foot contour elevation data for use in the city's GIS	P,X, All	UF	TBA	240,000
77	36.617	NA	99F017	Boca Raton, City of	Shutters, install complaint shutters for city library	P,A	UF	TBA	50,000
78	36.35	NA	99F041	Cloud Lake, Town of	Comprehensive Emergency Management Plan development	P,X, All	UF	TBA	15,000
79	34.067	NA	99F120	Royal Palm Beach, Village of	Generator: purchase on site sodium hyper chlorite generator	P,A,M	UF	TBA	500,000
80	34.0	NA	01F005	Palm Beach Shores, Town	Storm Water Infrastructure Engineering Study Project	P,B	UF	TBA	32,106
81	33.0	NA	01F004	Palm Beach Shores, Town	Storm water infrastructure construction project	P,B	UF	TBA	Not Available
82	32.50	NA	00S008	Riviera Beach, City of	Fueling center construction	P,X, All	UF	TBA	1,500,000
83	28.25	NA	00S009	Riviera Beach, City of	EOC construction	P,X, All	UF	TBA	10,000,000

Tropical Storm Fay (FEMA-1785-DR-FL)

Unranked Projects

00G012	Lake Worth, City of	Front-end loader purchase for debris management	N/A
00G018	Fl Army Nat'l Guard	Military Support for Florida Citizens	N/A
00G020	Delray Beach, City of	EOC software and tech systems	$61,200
00G021	Delray Beach, City of	CERT Training	$17,958
02S001	Riviera Beach, City of	Storm Water system upgrade along Avenue P.	$528,300
02G003	Lake Worth, City of**	Front-end loader purchase	$150,000
02G004	Medical Examiners Off, PBC	32'x48' Morgue Decontamination Body Cooler; 60 Body Carts & Trays, 4 Lapt9op Computers and GPS System	$328,000

02G007	Palm Beach Co & New Hope Charities Inc.	Health & Education Center construction – Shelter 210 evacuees	$918,000
02G009	Jupiter, Town of	Water system security risk mitigation.	$300,000
02G010	Juno Beach, Town of	Communications Console System, Microprocessor-based	$50,000
02G011	Palm Beach, Town of	Hurricane Shutters for Town Hall	$418,792
02G012	Palm Beach County, DEM	Training Videos supporting CERT	$102,404
02G013	Palm Beach County, DEM	Program- interactive, computer & web-based. Assist small Mun. with CEMP	$150,000
02G015	Delray Beach, City of	Hurricane Shelter retrofit for Delray Bch Community Center	$300,000
02G016	Sheriff's Office, PBC	Airborne video information system	$1,080,983
02G017	Palm Beach County DEM	Risk Shelter in Pahokee	$198,000
02G020	PBC Health Dept.	Two-way 800 Mhz radio communications system	$72,937
02G021	Palm Beach Shores	Emergency Helicopter Landing Pad at Inlet Park	Unknown
02F005	Environmental Resource Management, Dept.	Acquisition of environmentally sensitive land from the City of Boca Raton for Nature Park and wetlands restoration. (Blue lake scrub)	$11,600,000
02F003	Jupiter, Town of	Security enhancements	
04G001	Palm Beach County	Acquisition and construction of retention ponds in flood prone area: Westgate Belvedere CRA	10,000,000
04G002	Palm Beach County	Develop an Enhanced Multi-Jurisdictional Post Disaster Redevelopment Plan for Palm Beach County	175,000
08-001	Greenacres, City of	Public Safety Headquarters Reshuttering Project	55,000

*Key: > NA = Not Available > UF = Upon funding

Potential Funding Sources

P = Primary Funds (PDM, HMGP, FMA)
X = EMPA Grant Funds
A = Hurricane mitigation Funds
B = Flood Mitigation Funds
G = Beach Erosion Mitigation Funds
M = Power Failure Mitigation Funds
Q = Communication Mitigation Failure

PALM BEACH COUNTY
HMGP PRIORITIZED PROJECT LIST
FEMA 1545
Hurricane Frances

Rank	FDEM#	Applicant	Project Description	Cost	Status
1	2-2-R	City of Greenacres	Wind Retrofit - City Hall	53,264	Completed
2	10-31-R	PB County Road & Bridge	Wind Retrofit – 6 Bascule Bridges	124,395	Completed
3	223-47-R	City of West Palm Beach	Wind Retrofit – Police Department	734,121	
4	221-141-R	City of West Palm Beach	Wind Retrofit – Community Center	91,720	
5	17-39-R	City of Boca Raton	Hardening/Shutter – EOC Complex	1,242,919	Withdrawn
6	18-40-R	City of Boca Raton	Wind Retrofit/Shutter – Police Dept.	152,493	Completed
7	19-32-R	City of Boca Raton	Wind Retrofit/Shutter - Library		Withdrawn
8	60-78-R	City of Belle Glades	Hardening – Glades General Hospital	87,760	
9	89-108-R	Town of Ocean Ridge	Hardening – New Municipal Bldg.	497,052	Completed
10	37-74-R	City of Boynton Beach	Wind Retrofit – City Hall	183,115	On Hold
11	127	City of Delray Beach	Wind Retrofit – Old School Square	565,270	Approved
12	275-67-R	City of Delray Beach	Wind Retrofit - Fire Station #1	138,130	Completed
13	64-117-R	Town of Mangonia Park	Wind Retrofit – Fire Station		Withdrawn
14	70-70-R	School District of PBC	Wind Retrofit - FHEC	2,813,627	
15	63-84-R	Town of Mangonia Park	Wind Retrofit – Town Hall & Police Station		Withdrawn
17	188-66-R	City of Pahokee	Wind Retrofit – Project Support Bldg.	23,635	
18	187-76-R	City of Pahokee	Wind Retrofit – Water Treatment Plant	12,755	
19	171-89-R	Town of Juno Beach	Hardening/Wind Retrofit – Municipal Complex	329,720	Completed
20	219	City of West Palm Beach	Wind Retrofit – City EOC	N/A	

Total County Allocation: $8,884,543

PALM BEACH COUNTY
HMGP PRIORITIZED PROJECT LIST
FEMA 1561
Hurricane Jeanne

Rank	FDEM#	Applicant	Project Description	Cost	Status
1	1561-30	Palm Beach County	Drainage Improvement – Grove Street Outfall	65,000	Phase 2 Approved
2	1561- 40	Town of Jupiter	Drainage Improvement – Barbara Street	8,239	De-Obligated
3	1561-42	Town of Jupiter	Drainage Improvement - Shores & North Fork	24,301	De-Obligated
4	1561-66	Town of Ocean Ridge	Drainage Imp. - Coconut Lane Injection Well		Withdrawn
5	1561-88	Town of Glen Ridge	Drainage Imp. – Glen Road Culvert	289,997	Withdrawn
6	1561- 91	Indian Trail Imp. District	Drainage Imp. – M-1 Basin Stormwater Improvements	537,000	Pending Contract
7	1561-128	Palm Beach County	Drainage Improvement – Lakeside Mobile Home Park	153,000	Completed
8	1561-130	Town of Palm Beach	Seawall Improvements – North Ocean Drive	N/A	Completed
9	1561-144	City Palm Beach Gardens	Drainage Imp. - U.S. 1 & PGA Blvd.		Withdrawn
10	1561-171	Palm Beach County	Drainage Imp. – Westgate-Belvedere Community North	150,000	Completed
11	1561-180	Palm Beach County	Drainage Imp. – Westgate-Belvedere L2 & L2B Canals	146,632	Environmental Review
12	1561-185	Village of Wellington	Flood Control - Pump Station #6	250,000	Pending Contract
13	1561- 194	City of Pahokee	Drainage Imp. – 7th Street Project	16,500	Approved
14	1561- 247	City of West Palm Beach	Ironhorse Stormwater Pump Station	128,600	Phase 1 Approval

County Allocation: $12,337,936

HMGP PRIORITIZED PROJECT LIST
FEMA 1609
Hurricane Wilma

Rank	FDEM#	Applicant	Project Description	Cost	Status
1	1609-210	City of Boynton Beach	Enhanced Harden – New EOC, Fire Rescue Bldg.	2,99,977	In Process
2	1609-211	City of Lake Worth	Wind Retrofit- City Hall	63,454	Approved
3	1609-212	City of Boca Raton	Harden- Old Town Hall	110,900	Approved
4	1609-213	Town of Lantana	Shutter – Town Library	43,000	Approved
5	1609-214	City of Lake Worth	Wind Retrofit – City Hall Annex	56,496	Approved
6	1609-215	City of Lake Worth	Wind Retrofit – Lake Worth Public Library	36,812	Approved
7	1609-216	Palm Beach County	Harden – Downtown Government Complex	17,607,460	Approved
8	1609-217	Palm Beach County	Harden – High Ridge Family Center	NA	Not Cost Effective
9	1609-218	Village Royal Palm Beach	Harden – Shutter Upgrade	615,587	Withdrawn
10	1609-219	City of West Palm Beach	Stormwater Improvement – Villages of Palm Beach	4,569,004	Under review
11	1609-220	City of Belle Glade	Harden Glades Administrative Complex	203,913	Withdrawn
12	1609-221	Town of Lantana	Harden Health Center	616,351	Withdrawn
13	1609-222	Palm Beach County	Drainage Imp. -West Belvedere Homes Community	3,090,596	Insufficient Funds
14	1609-223	Palm Beach County H.D.	Harden - Delray Health Clinic	420,622	Insufficient Funds
15	1609-224	Palm Beach County H.D.	Harden – Health Clinics	71,899	Insufficient Funds
15	1609-225	Palm Beach County H.D.	Harden – Jupiter Aux. Health Clinics	237,401	Insufficient Funds
16	1609-226	Palm Beach County H.D.	Harden – Northeast Aux. Health Clinics	193,785	Insufficient Funds
17	1609-227	Palm Beach County	Acquisition – Lakeside Mobile Home Park	3,330,000	Insufficient Funds
18	1609-228	Palm Beach County	Acquisition/Excavation - Westgate-Belvedere Homes	3,048,045	Insufficient Funds
19	1609-229	City of West Palm Beach	Stormwater Improvement – WPB Northwood	625,000	Insufficient Funds
20	1609-230	Palm Beach County	Harden – Senior Center	13,298	Insufficient Funds

County Allocation: $14,175,499

Palm Beach County LMS

HMGP Prioritized Project List

(Tropical Storm Fay: FEMA-1785-DR-FL)

Funding Priority	Applicant	Goals/Objectives Implemented	Estimated Project Cost	Project Description
1	Town of Mangonia Park	Goals: 1,3,7,9 (pgs 2-4) Objectives: 1,3,4,5 (pg 2-4)	$500,000	Design and construction of improvements to drainage systems to prevent residential flooding.
2	Palm Beach County Westgate-Belvedere CRA	Goals: 1,3,7,9 (pgs 2-4) Objectives: 1,3,4,5 (pg 2-4)	$300,000	Drainage improvement project involving swale improvements to reduce flooding of the Belvedere Homes community. Project can be scaled back according to fund availability.
3	City of Greenacres	Goals: 1,3,7,9 (pgs 2-4) Objectives: 1,3,4,5 (pg 2-4)	$38,700	Drainage improvement – Dredging and regrading of two canals (A & B) which support two major subdivisions
4	City of Greenacres	Goals: 1,3,7,9 (pgs 2-4) Objectives: 1,3,4,5 (pg 2-4)	$160,638	Drainage improvement – Catch basin, pipe repair and catch basins Canals A & B which support two subdivisions.
5	City of Greenacres	Goals: 1,7,9 (pgs 2-4) Objectives: 1,3,4,5 (pg 2-4)	$55,000	Wind retrofit –shuttering of Public Safety Headquarters./EOC with velocity impact shutters
6	City of Lake Worth Public Services Department	Goals: 1,7,9 (pgs 2-4) Objectives: 1,3,4,5 (pg 2-4)	$180,000	Hardening of the Lake Worth Resource Center with impact resistant windows and new doors. The facility houses various functions, including the City's Economic Relief Initiative
7	Village of Wellington	Goals: 1,7,9 (pgs 2-4) Objectives: 1,3,4,5 (pg 2-4)	$250,000	Impact resistant windows for the Town Square Municipal Complex which will house all municipal departments
8	Palm Beach County Facilities Management	Goals: 1,7,9 (pgs 2-4) Objectives: 1,3,4,5 (pg 2-4)	$301,700	Replace roof of the Midwest Service Center in Royal Palm Beach which houses the Tax Collector, PZ&B, and Commissioners.
9	Palm Beach County Engineering -Road & Bridge	Goals: 1,7,9 (pgs 2-4) Objectives: 1,3,4,5 (pg 2-4)	$65,000	Retrofit the windows of the Palmetto Park Bridge over the Intracoastal to be vertical, with vertical storm impact windows. The current windows are old and not compliant with current codes. This would complete repairs to the county's bascule bridges.
10	Palm Beach County Facilities Management	Goals: 1,7,9 (pgs 2-4) Objectives: 1,3,4,5 (pg 2-4)	$283,400	Install screen shutter system on the Highridge Family Center which also serves as the shelter for PBC families
	Total		$2,134,438	

April 2, 2009

County Allocation upon Submission: **$1,013,911.57**

Flood Mitigation Technical Advisory Committee/Stub Canal Task Force
Prioritized Projects

Ranking	Improvement	Lead Entity
1	Cherry Road Crossing	Westgate CRA
2	PBIA West Canal Structure (Revised Operating Schedule)	PBIA
3	Howard Park Storage	City of WPB
4	Lower Stub Canal Improvements (Southern Blvd - Summit Blvd.)	Palm Beach County
5	Westgate Storage Facilities	Westgate CRA
6	Renaissance Storage Expansion	City of WPB
7	Redevelop Waterview MHP	Westgate CRA
8	Improve L-2 Conveyance	Westgate CRA
9	Belvedere Ditch Improvement	Westgate CRA
10	Tuxedo Park Conveyance Improvements	City of WPB
11	Boyd Street Structure Improvements	FDOT
12	PBIA Interbasin Transfers	PBIA
13	Upper Stub Canal Conveyance Improvements	City of WPB/FDOT
14	Remove Temporary Culverts at Boyd Street (Complete)	FDOT

PB COUNTY - STUB CANAL TASK FORCE MEMBERS

Name	Title	Represents
Ken Todd (Chair)	Water Resources Manager	Palm Beach County
Alan Wertepny	Stub Canal Consultant	Mock, Roos, & Assoc.
Anne Capelli	Stub Canal Consultant	Mock, Roos, & Assoc.
Alice McLane	Mayor	Town of Glen Ridge
Dorothy Gravelin	Town Clerk	Town of Cloud Lake
Lynn Summer	Councilperson	Town of Cloud Lake
Michael Klingensmith	Councilperson	Town of Cloud Lake
Bob Dovey	Aide	Commissioner Newell
Warren Newell	PBC Commissioner	PBC District 3
Jeff Koons	PBC Commissioner	PBC District 2
Damon Meiers	Regulation Deputy Dir.	SFWMD
Arlan Pankow	Operations	SFWMD
Ron Mierau	Operations Dir.	SFWMD
Tony Waterhouse	Regulation Permitting Dir.	SFWMD
Carol Wehle	Executive director	SFWMD
George Horne	Deputy Executive Director	SFWMD
Chip Merriam	Deputy Executive Director	SFWMD
Fred Rapach	PBC Service Center Director	SFWMD
Jeff Gronborg	Compliance Engineer	SFWMD
Laura Corry	PBC Service Center	SFWMD
Pat Martin	Chief Engineer	LWDD
Elizee Michel	Director	Westgate CRA
Thuy Shutt	Assist. Dir,	Westgate CRA
Fred Wade	Board Member	Westgate CRA
Ellen Daniel	Engineer	FDOT
Francis Lewis	District Engineer	FDOT
Ron Daniels	Board Member	Westgate CRA
Ken Readen	Assist. City Manager	City of West Palm Beach
John Alford	Engineer	City of West Palm Beach

PB COUNTY - STUB CANAL TASK FORCE (CON"T)

Robert Weisman	County Administrator	PBC
Verdenia Baker	Deputy County Administrator	PBC
Kenneth Rogers	Land Development Director	PBC
Pat Rutter	Planning Supervisor	PBC
Tim Granowitz	Park Planner	PBC
Rod Braun	Environmentalist	PBC
Charlie Rich	Engineer	PBC
Tony Luffman	Road Bridge Assist Supt.	PBC
Bruce Pelly	Director	PBIA
Jerry Allen	Assist. Director	PBIA
George Webb	County Engineer	PBC
Randy Wertepy	Engineer Consultant	Westgate CRA
Rick Serra	Engineer Consultant	Westgate CRA
Mary Brandenburg	State Representative	Florida House
Nicole Williams	Aide	Rep. Brandenburg
Dick Wade	Homeowner	Pineapple Park
Ed Williams	Homeowner	Pineapple Park
Al Vazquez	Homeowner	City of WPB
Sheridan "Butch" Truesdale	Sr. Mitigation Planner	LMS/Em. Mgt.

Current Representation on PPL

At this writing, Palm Beach County and 30 of the 38 municipalities of the county have at least one project on the PPL.

In addition, other project sponsors include:

- Palm Beach County Sheriff's Office
- Indian Trail Improvement District
- Solid Waste Authority
- Palm Beach County Water Utilities
- PBC/Panther Park Student Housing
- Florida Army National Guard
- Palm Beach County Medical Examiner's Office
- Palm Beach County Health Department
- PBC/New Hope Charities
- Environmental Resources Management
- Palm Beach County
- Palm Beach Gardens Fire rescue
- North Palm Beach CID
- West Palm Beach Police Department
- Boynton Beach Police Department
- Palm Beach County Division of Emergency Management
- Palm Beach County Road & Bridge
- School District of Palm Beach County.

Municipalities Not Currently Represented on the PPL:

- Loxahatchee Groves
- Village of Golf
- Highland Beach
- Hypoluxo
- Jupiter Inlet Colony
- Lake Clarke Shores
- North Palm Beach
- Ocean Ridge
- Palm Beach
- South Bay
- South Palm Beach
- Tequesta

While the above communities do not have active projects on the currently published LMS prioritized project list, this does not mean they have not had previously listed projects or that the community is not actively engaged in mitigation activities. As described in the Jurisdictional Initiatives Section (B-2) of Appendix B, virtually all 38 municipalities have and are engaged in ongoing mitigation activities.

The published LMS project list is ever changing. Completed projects are removed from the list and new projects are added each publishing cycle. Historically, the Prioritized Project List has been used for funding considerations. Not all mitigation projects have been listed. For example, smaller projects not seeking outside funding assistance, and large-scale projects beyond the practical thresholds of traditional funding assistance programs used by the LMS, have not been submitted for LMS prioritization and listing. In

some instances such projects are included in local capital improvement plans but not included in the LMS. In a few instances, multi-jurisdictional or county-wide initiatives are not included in the LMS list. In some instances, project sponsors, discouraged by funding assistance prospects or timing issues, have withdrawn their projects and pursued alternative, independent, locally supported strategies.

The LMS plans to step up its efforts to encourage participating communities to list all mitigation initiatives with the LMS, whether or not they are seeking outside funding. It will be the function of the Strategy Development, Project Support Committee, and other standing and ad hoc LMS subcommittees to work with smaller, resource limited, communities and with chronically under-represented communities, to conceive and develop viable, cost-effective mitigation plans, proposals and projects. LMS members from non-represented communities will be asked to report on independent planned and executed projects.

Appendix F: Potential Mitigation and Protective Measures

This appendix provides a detailed listing of mitigation strategies and measures identified by the LMS, sorted by hazard type in partial fulfillment of the following FEMA requirements:

Requirement §201.6(c)(3)(ii): The mitigation strategy **shall** include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Requirement §201.6(c)(3)(i): The hazard mitigation strategy **shall** include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Requirement: §201. 6(c)(3)(ii): The mitigation strategy must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Potential mitigation measures are also addressed in Sections 2.1, 2.2, 2.3**,** and 2.4. Specific references are given by number for each mitigation initiative listed.

Section 2.0 of this appendix presents an annotated bibliography of data sources for all mitigation measures and initiatives. This bibliography identifies, describes, and, where possible, cross references data sources with funding sources for the proposed mitigation measures. (Additional data sources are being compiled as Plan enhancements are being developed)

1.0 Potential Mitigation and Protective Measures

Natural Hazards

Hurricane

- Encourage neighborhood preservation/revitalization for flood and wind damage retrofitting (48)
- Provide information to contractors and homeowners on the risks of building in hazard-prone areas (48)
- Develop a list of techniques for homeowner self-inspection and implementation of mitigation activities (48)
- Implement dune restoration programs (48)
- Acquire shorefront land for open space (48)
- Develop a comprehensive sheltering system with funding provided for the acquisition and construction of shelters (48)
- Identify refuges of last resort for those unable to reach shelters (48)
- Implement a Tree Hazard Management Program to encourage responsible planting practices and minimize future storm damage to buildings, utilities, and streets (2)

- Encourage building inspection by a hazard mitigation professional (2,15)
- Practice a tree trimming maintenance program (48)
- Re-landscape with native species (48)
- Distribute hurricane preparedness information including pet sheltering plans (9)
- Encourage the purchase of flood insurance (9)
- Enforce building codes (28)
- Encourage insurance premium credits (28)
- Retrofit:
    - Wet floodproofing (allowing water to enter uninhabited areas of the house) (33)
    - Dry floodproofing (sealing the structure to prevent floodwaters from entering) (33)
    - Install backflow valves on sewer systems (48)
    - Venting on roofs (3)
    - Garage doors with stiffer horizontal members (3,23)
    - Glider tracks and track supports should be strengthened (3,23)
    - In-place shutters (3,9,15,23)
    - Hurricane straps and hurricane clips (15)
    - Reinforcement of concrete block wall; concrete tie-columns at all corners (3)
    - Bracing with struts or pilaster columns in walls perpendicular to freestanding walls (3)
    - Elevation of structures by piers, posts and columns, and pilings (3)
    - Adequate connection or anchoring of each element to the adjacent element (3)
    - Add shutters for glazed openings (3,23)
    - Install impact resistant glass, armor screen other approved wind protection products (3,23)
    - Re-nail sheathing (3)
    - Create a secondary water barrier (33)
    - Provide support for sliding glass doors and double doors opening to the outside (3,23)
    - Improve anchorage of windows to openings (3)
    - Add ridge ventilators to reduce uplift of wood sheathing (3)
    - Strengthen garage doors and particularly double-wide garage doors (3,23)
    - Anchor adjacent structures, including privacy fences, pool enclosures, and patio roofs (3)
    - Improve connections of porch roofs and overhangs (3)
    - Reinforce entry doors (3,32)
- Manage development/building policies and practices in Coastal High Hazard Area
- Modify building codes:
    - Hip roofs instead of gable (3,23,32)
    - Metal panels that simulate tile instead of tile roofs (3)
    - Consistent mortar pad placement (3)
    - Full 10-inch mason's trowel of mortar on tile roofs (3)
    - 4 to 6 inch nail spacing on sheathing panel (3,32)
    - Venting on roofs (3,32)
    - Garage doors with stiffer horizontal members (3,32)
    - Multiple-panel sliding glass doors and windows should be avoided (3)
    - Individual panel width should be no more than 3 feet (3)
    - Total window and door openings should be no more than 30% of a wall's total area (3)
    - Shatter-resistant transparent material (3,32)
    - Improved adherence to adequate attachment procedures (3)

- Hurricane straps and hurricane clips (3,32)
- Reinforcement of concrete block walls; concrete tie-columns at all corners (3)
- Bracing with struts or pilaster columns in walls perpendicular to freestanding walls (3)
- Walls sufficiently anchored in the foundation or story below (3)
- Adequate connection or anchoring of each element to the adjacent element (3)
- Require hurricane shelters on multi-unit housing (48)
- Construction products examined by independent laboratories under the guidance of the county compliance office (32)
- Contractors must install high-quality shutters or strong “impact” glass, like that found in car windshields in each new single family home (32)

Flood

- Encourage neighborhood preservation/revitalization for floodproofing techniques (48)
- Elevate structures above the 100-year flood level (48,33)
- Maintenance program to clear debris from stormwater drainage areas (48)
- Provide information to contractors and homeowners on the risks of building in hazard-prone areas and mitigation (48)
- Provide the public with Federal Emergency Management Agency (FEMA) floodplain maps (48)
- Develop a list of techniques for homeowner self-inspection an implementation of mitigation activities (48)
- Incorporate a hazard disclosure requirement for deed transfers, leases, or other contracts for sale or exchange of property in flood hazard areas (48)
- Install backflow valves in sewer systems (48)
- Improve storm drainage areas (48)
- Develop sediment control to prevent clogged drainage systems such as street sweeping, curb and gutter cleaning, paving dirt roads, and planting vegetation on bare ground (1,39,44)
- Investigate the use of flood prone areas as open space (28,38,40,44,45,48)
- Retrofit critical facilities (48)
- Purchase flood insurance (7,15)
- Know evacuation routes (7)
- After a flood, inspect foundations of buildings for cracks and other damage (7)
- Make sure buildings are not in danger of collapsing after a flood (7)
- Encourage building inspection by a hazard mitigation professional (2,15)
- Regulate development in the floodplain (38,44)
- Enforce building codes (28)
- Insurance premium credits (28)
- Retrofit:
    - Elevate the lowest floor above the 100-year flood level (33)
    - Wet floodproofing (allowing water to enter uninhabited areas of the structure) (33)
    - Dry floodproofing (sealing the structure to prevent flood waters from entering) (33)
    - Levees and floodwalls (constructing a barrier around the structure to keep out flood waters) (33)
    - Demolition (tearing down the structure and rebuilding with appropriate floodproof

techniques or relocating the structure) (7)
    - Elevate the main breaker or fuse box (15)

Severe Thunderstorms and Lightning

- Clear dead or rotting trees and branches (12)
- Public information on when to turn off gas, electricity, and water; how to develop an emergency communication plan; and actions to take during a severe thunderstorm such as avoiding bathtubs, water faucets, and sinks (12)
- Secure outdoor objects that could become projectiles (12)
- Install lightning rods (12)
- Encourage purchase of flood insurance (12)

Wildfire

- Acquire land susceptible to fire for conversion to open space (42,46,48)
- BEHAVE (Fire Behavior Predication and Fuel Modeling System) (30)
- METAFIRE (National information system that transmits daily severity index values for every climate division in the country) (30)
- Move shrubs and other landscaping away from the sides of the structure (15)
- Clean brush and dead grass from the property (13,15)
- Public information on safe fire practices (build away from nearby trees or bushes, fire extinguisher availability) (13,28)
- Building code modification:
    - Fire-resistant materials when renovating, building, and retrofitting (13,28)
    - Create a safety zone between the structure and combustible plants and vegetation (stone walls, swimming pools) (13)
    - Install power lines underground (13)
    - Install tile, fire-retardant shingles, asphalt, fiberglass, concrete tile, or metal on the roof (4,13,15)
    - Plant trees in clusters so that there are gaps in the tree branch canopies overhead (4)
    - Use alternatives to wood and other combustible materials such as brick, stone, or metal when building walls (4)
    - Adequate water supply (28)
    - Access for fire trucks (a turnaround) (28)
- Prescribed burns (20,22,42)
- Keep trees trimmed so there is no contact with power lines or other wires (16)
- Cut back tree limbs that overhang the structure (4)
- Remove combustible debris from around the structure (4)
- Adopt the wildland/urban interface building code (28)

Tornadoes

- Telephone warning system (29)
- Community warning sirens (29)
- NOAA weather radio tone alerts (29)
- Underground shelter actions to be taken during hurricanes and tornadoes need better distinction, especially among elderly residents (29)

- Retrofit structures to include reinforced safe room (14)
- Modify building codes:
  - Include an interior reinforced “safe room” in all new structures (14)
  - Shingles around the edges of the roof should be set into a special mastic (27)
  - Roof sheathing: the plywood or particle board should be nailed securely to the rafters; nails should be 6 in. on center at the edges, and 12 in. on center elsewhere (27)

Extreme Temperatures

- Install window air conditioners snugly (6)
- Install temporary reflectors, such as aluminum foil covered cardboard to reflect any heat back outside (6)
- Consider keeping storm shutters up all year (6)
- Conserve electricity (6)
- Public information on heat-related disease prevention (drink plenty of water, avoid strenuous outdoor activities) (6)

Soil/Beach Erosion

- Sand management (36)
- Relocation of threatened facilities (36)
- Threatened real estate may be set aside as open space (36)
- Vegetation replenishment program (34,37)
- Cooperative approach (vs. individual i.e., one property will have a seawall, another property will have a groin, etc.) (35)

Agricultural Pest and Disease

- Prompt removal of citrus trees infected by citrus canker (18)
- Prompt removal of tomato plants infected with tomato yellow leaf curl virus (19)
- Eliminate breeding spots of insects (31)
- Patch screens and other places where pests enter greenhouses (31)

Drought

- Create cooperative Federal/non-Federal drought contingency plans for rapid implementation during water shortages (26)
- Develop an early warning system (26)
- Evaluate the current use of ground water (26,44)
- Establish new data collection networks (26)
- Study public willingness to pay more for more reliable water supplies (26)
- Study effectiveness of conservation measures (26,44)
- Monitor vulnerable public water supplies (26)
- Pass legislation to protect and manage ground water (26)
- Provide funds for water recycling projects (26)
- Organize drought information meetings for the public and media (26)
- Implement water conservation awareness programs (26)
- Assist water agencies in developing contingency plans (26)

- Establish stronger economic incentives for private investment in water conservation (26)
- Implement water metering and leak detection programs (26)
- Adopt an emergency water allocation strategy to be implemented during severe drought (26)
- Evaluate worst-case drought scenarios for possible further actions (26)

Epidemic

- Anthrax vaccine is available (17)
- Rodent control (24)
- Mosquito control (24)
- Regular maintenance of cooling and plumbing systems (24)
- Wellfield protection, water purification maintenance (24)
- Adequate sanitation control measures (24)
- Proper food processing (24)
- Regulate widespread use of antibiotics (24)

Technological Hazards

Nuclear Disaster

- Prepare a community accident response plan (10)
- Install community sirens (10)
- Install a telephone warning system (10)
- Distribute tone alert radios (10)
- Conduct public information meetings (10)
- Disseminate emergency information throughout the community (in-place sheltering) (10)

Power Failure

- Voluntary conservation public information (bill inserts) (21)
- Electrical Emergency Contingency Plan (21)

Hazardous Materials Accident

- Public information on detecting a spill/release (8)
- Public information on response/evacuation plans (8)
- Install a telephone warning system (8)
- Install community sirens (8)
- Retrofit seal gaps and air-conditioning systems (8)

Transportation System Accident

- Develop accident contingency plans (47)
- Response training (47)

Wellfield Contamination

- Have water tested by EPA (25)
- Maintain isolation distances from potential contamination sources (25)
- Inventory potential sources of contamination (25)
- Develop water supply contingency strategy (5)
- Reward landowners who do not conduct activities that could contaminate the water supply by easing their taxes (5)
- Investigate growth management programs to ensure that wellfield protection programs are in place before development occurs (5)

Societal Hazards

Terrorism and Sabotage

- Encourage public education programs on terrorism including information on potential targets, visible targets, etc. (11)
- Drills for people who work in large buildings including knowing where fire exits are located, keeping fire extinguishers in working order, learning first aid (11)
- Develop a bomb threat plan (11)
- Develop an explosion plan for building (cover nose and mouth with a wet cloth, stay below smoke, exit building as quickly as possible, tap on a pipe if trapped so rescuers know where to look) (11)

All Hazards

- Map vulnerable areas and distribute information about the hazard mitigation strategy and projects (48)
- Provide information to contractors and homeowners on the risks of building in hazard-prone areas (48)
- Develop a list of techniques for homeowner self-inspection an implementation of mitigation activities (48)
- Organize and conduct professional training opportunities regarding natural hazards and hazard mitigation (48)
- Distribute NOAA weather radios (school superintendents, etc.) (48)
- Sound land use planning based on known hazards (48)
- Enforcing effective building codes and local ordinances (28,48)
- Increasing public awareness of community hazards (48)
- Provide sites that are as free as possible from risk to natural hazards for commercial and industrial activities (28,48)
- Consider conservation of open space by acquisition of repetitive loss structures (28,48)
- Ensure a balance among residential growth, conservation of environmental resources through a detailed analysis of the risks and vulnerability to natural hazards (28,48)
- Joint planning and sharing of resources across regions, communities, and states (28,48)
- Establish a hazard mitigation council (48)
- For future proposed development design guidelines, incorporate hazard mitigation provisions, including improved maps. (28,48)

- Add a safe room requirement for all new buildings (14,23)
- Establish incentives to encourage business owners and homeowners to retrofit buildings with hazard-resistant features (28)
- Teach disaster and hazard awareness in schools (28)

Section 2.0: Annotated Bibliography for Mitigation Measure Data Sources

#	Reference	Description	Funding Source
1	The Indian River Lagoon's problems are as common as dirt. Indian River Lagoon Update. Winter 1998.	Describes the detrimental effects that uncontrolled sediment can have on local waterways and drainage areas; also presents potential mitigation projects to control sediment.	
2	Alachua County Office of Emergency Management. Hazard mitigation page. http://www.co.alachua.fl.us/~acem/mitigati.htm (26 Jun 1998)	Defines mitigation and provides examples of community-wide and individual mitigation practices.	FDCA, FDEP, FL Dept. of Health, FL Dept. of Ag., FEMA, USDOE, US Dept. of Housing and Urban Dev.
3	Ayscue, J. Natural Hazards Research Center. Hurricane damage to residential structures: risk and mitigation. (Nov 1996) http://www.colorado.edu/hazards/wp/wp94/wp94.html#intro	Describes potential hurricane hazards from wind and water; discusses building techniques that can mitigate hurricane damage.	
4	Boulder County. Wildfire hazard identification and mitigation system for Boulder County, Colorado. http://www.boco.gov/gislu/whims.html (25 Jan 1999)	Contains a summary of the WHIMS project, detailed maps from the project, and mitigation suggestions to protect structures from wildfire.	...multiple local, state, and federal government inter-agencies...
5	Browning, C. Community wellhead protection programs. http://hermes.ecn.purdue.edu/water_quality/documents/oef-890.ok.ascii (13 Nov 1998)	Describes each element of a community wellfield protection program.	
6	Federal Emergency Management Agency."Fact sheet: extreme heat." (15 Jan 1998) http://www.fema.gov/library/heatf.htm (2 Dec 1998)	Mitigation measures related to extreme heat; most are individual actions.	

#	Reference	Description	Funding Source
7	Federal Emergency Management Agency. Fact sheet: floods and flash floods. (13 Jan. 1998) http://www.fema.gov/library/floodf.htm (2 Dec 1998)	Describes activities that may prevent a flood emergency, reduce the chance of a flood emergency happening, or lessen the effects of unavoidable emergencies. Activities are categorized as before, during, and after a flood event.	
8	Federal Emergency Management Agency. Fact sheet: hazardous materials accidents. (10 Jan 1998) http://www.fema.gov/library/hazmatf.htm (2 Dec 1998)	Contains information on preparing for and detecting a hazardous material accident.	
9	Federal Emergency Management Agency. Fact sheet: hurricanes. (14 Jan 1998) http://www.fema.gov/library/hurricaf.htm (2 Dec 1998)	Describes measures to be taken before, during, and after a hurricane to prevent loss of life and property.	
10	Federal Emergency Management Agency. Fact sheet: nuclear power plant emergency. (27 Feb 1997) http://www.fema.gov/library/radiolo.htm (2 Dec 1998)	Explains the nature of a nuclear disaster and describes related mitigation measures.	
11	Federal Emergency Management Agency. Fact sheet: terrorism. (10 Jan 1998) http://www.fema.gov/library/terrorf.htm (2 Dec 1998)	Mitigation measures related to various terrorist attacks.	
12	Federal Emergency Management Agency. Fact sheet: thunderstorms and lightning. (30 Jan 1998) http://www.fema.gov/library/thunderf.htm (2 Dec 1998)	Contains mitigation measures relating to thunderstorms and lightning.	
13	Federal Emergency Management Agency. Fact sheet: wildland fires. (10 Jan 1998) http://www.fema.gov/library/wildlanf.htm (2 Dec 1998)	Mitigation practices for before, during, and after a wildfire event.	
14	Federal Emergency Management Agency. Taking shelter from the storm: building a safe room in your house. http://www.fema.gov/mit/tsfs01.htm (25 Nov 1998)	Contains two sections; one is a description of hazards that may threaten a structure, the second is how to plan and construct a safe room.	

#	Reference	Description	Funding Source
15	Federal Emergency Management Agency. What can homeowners do to reduce their risk from disasters? (24 Aug 1996) http://www.fema.gov/mit/lowcost.htm	Low-cost mitigation measures related to floods, seismic events, wind events, and wildfire.	
16	Federal Emergency Management Agency. Wildfire - wildland/urban interface. (17 Oct 1996) http://www.fema.gov/mit/wfmit.htm (30 Oct 1998)	Examples of how to create a "Safety Zone" around a home or business.	
17	Findlay, S. USA Today. Clinton sees little anthrax threat to civilians. (17 Dec 1997) http://home.eznet.net/~kenberry/materials/usatodayarticle.htm (12 Aug 1998)	Article found on the internet states that an Anthrax vaccine is available.	
18	Florida Department of Agriculture and Consumer Services. Citrus canker - the threat to Florida agriculture - Frequently Asked Questions. http://doacs.state.fl.us/canker/faqs.htm (4 Nov 1998)	Identifies citrus canker and the procedure to eradicate the disease.	
19	Florida Department of Agriculture and Consumer Services. The latest on tomato yellow leaf curl virus. (26 Aug 1997) http://www.ifas.ufl.edu/~entweb/updatetyl.htm (3 Nov 1998)	Describes symptoms of TYLCV and methods of eradication.	
20	Florida Department of Emergency Management. Review of efforts to optimize management and production of timber on State lands and review of the prescribed burning policy of the Division of Forestry. (Oct 1998) http://www.state.fl.us/comaff/DEM/gwfrmrc/gwrmrc.htm (21 Dec 1998)	Reviews the benefits and drawbacks of prescribed burning.	Federal Rural Community Fire Protection Program
21	Florida Reliability Coordinating Council. Generating Capacity Shortage Plan. http://www.frcc.com/capacityemergencyplan.htm.#gca	Plan for when generating capacity is tight, also suggestions for voluntary conservation.	
22	Hickenlooper, B. Fire damaged lands begin to heal. Stream Lines. Winter 1998, p.4	Prescribed burning is used to control wildfire outbreaks on St. Johns River Water Management District land, and this article describes its many benefits.	

#	Reference	Description	Funding Source
23	Manatee County Emergency Management. Hazard mitigation. http://www.co.manatee.fl.us/em_html/haz_mit.htm (20 Nov 1998)	Hurricane mitigation suggestions.	
24	McNeill, W. Emerging infectious diseases plan. (1976) http://www.cdc.gov/ncidod/publications/eid_plan/summary.htm (11 Nov 1998)	Centers for Disease Control and Prevention Strategic Plan emphasizing surveillance, applied research, and prevention activities to maintain a strong defense against infectious diseases.	
25	Minnesota Dept. of Health. Wellhead protection for Minnesota. (23 Sep 1998) http://www.health.state.mn.us/divs/eh/whp_mn2.html (13 Nov 1998)	Wellfield protection plans.	
26	National Drought Mitigation Center. Drought mitigation tools for states. (15 Nov 1995) http://enso.unl.edu/ndmc/mitigate/policy/tools.htm	Drought Mitigation tools for governments based on two surveys of states.	
27	National Science Foundation. Tornadoes - protecting your home from the mighty twister. http://whyfiles.news.wisc.edu/013tornado/strong_house.html (4 Feb 1999)	Suggestions for protecting your home against a tornado.	
28	Nelson. L. 1997. Emergency management - a legislator's guide. National Conference of State Legislatures, Denver, CO. 47 pp.	Explains how Illinois, Missouri, and Iowa purchased lands from homeowners whose homes were repetitive damage structures; describes how building code enforcement prevented damage from wildfires, floods, and earthquakes; explains how insurance premium credits work; mentions the development of a wildland/urban interface building code, etc.	FEMA, CDBG, state government, state government competitive grant money from the Emergency Management and Assistance Trust Fund

#	Reference	Description	Funding Source
29	Schmidlin, T., et al. Natural Hazards Research Center. Risk factors for death in the 22-23 February 1998 Florida tornadoes. (1998) http://www.colorado.edu/hazards/qr/qr106/qr106.html (7 Aug 1998)	Draws conclusions toward tornado mitigation from surveys, interviews, and damage reports from the 22-23 February 1998 Florida tornadoes.	
30	Subcommittee on Natural Disaster Reduction. Agency success stories in natural disaster reduction. (18 Oct 1995) http://www.usgs.gov/sndr/success.html (30 Dec 1998)	Briefly describes the BEHAVE and METAFIRE prediction/modeling systems.	
31	The National Food Safety Database. Controlling insects. (June 1993) http://www.foodsafety.org/dh/dho45.htm (14 Dec 1998)	Suggestions for insect control, and insect control after a natural disaster.	
32	Tibbetts, J. Sea Grant Haznet. Racing to catch up: south Florida's hurricane threat and building codes. (6 Aug 1998) http://www.haznet.org/text/sflhurricane.html (9 Nov 1998)	Reveals the changes made in south Florida's building codes since hurricane Andrew.	
33	United States Army Corps of Engineers. Local floodproofing programs. June 1994, 28 pp.	Provides examples and photographs of projects financed by local governments and also identifies lessons learned that can help communities interested in financing floodproofing projects.	
34	United States Army Corps of Engineers. New planting. http://superior.lre.usace.army.mil/shore.protection/nwplntng.html (4 Nov 1998)	Explains how vegetation can be used as an erosion control device.	
35	United States Army Corps of Engineers. Planning considerations. http://superior.lre.usace.army.mil/shore.protection/plncns.html (4 Nov 1998)	Cooperative measures against beach erosion are detailed.	
36	United States Army Corps of Engineers. Solutions to coastal erosion. http://www.rain.org/~pjenkin/point/growing/solution.html (4 Nov 1998)	Examples of general solutions, hard solutions, soft solutions, and retreat as coastal erosion mitigation.	

#	Reference	Description	Funding Source
37	United States Department of Agriculture. USDA conservation programs - conservation plant material. http://www.nrcs.usda.gov/NRCSProg.html (2 Feb 1999)	Explains the Conservation Plant Material Center Program's purpose as providing native plants that can help solve natural resource problems such as erosion.	Conservation Plant Materials Center Program
38	United States Department of Agriculture. USDA conservation programs - resource conservation and development program (RC&D). http://www.nrcs.usda.gov/NRCSProg.html (2 Feb 1999)	Describes the RC&D Program.	Resource Conservation and Development Program
39	United States Department of Agriculture. USDA conservation programs - conservation reserve program. http://www.nrcs.usda.gov/NRCSProg.html (2 Feb 1999)	The Conservation Reserve Program encourages farmers to convert highly erodible land to vegetative cover.	Conservation Reserve Program (CRP)
40	United States Department of Agriculture. USDA conservation programs - flood risk reduction program. http://www.nrcs.usda.gov/NRCSProg.html (2 Feb 1999)	Describes the Flood Risk Reduction program; who is eligible and what the requirements of the program are.	Flood Risk Reduction Program
41	United States Department of Agriculture. USDA conservation programs - forestry incentives program. http://www.nrcs.usda.gov/NRCSProg.html (2 Feb 1999)	Explains the Forestry Incentives Program (FIP), it supports good forest management practices on privately owned non-industrial forest lands nationwide.	Forestry Incentives Program
42	United States Department of Agriculture. USDA conservation programs - stewardship incentives program. http://www.nrcs.usda.gov/NRCSProg.html (2 Feb 1999)	Qualifications to participate in the program, and benefits provided.	Stewardship Incentives Program
43	United States Department of Agriculture. USDA conservation programs - watershed and river basin planning and installation public law 83-566 (PL566). (26Oct 1998) http://www.ftw.nrcs.usda.gov/pl566/WHIP.html (2 Feb 1999)	Lists the purposes of watershed projects and describes the program.	Watershed and River Basin Planning and Installation Public Law 83-566

#	Reference	Description	Funding Source
44	United States Department of Agriculture. USDA conservation programs - watershed surveys and planning. http://www.nrcs.usda.gov/NRCSProg.html (2 Feb 1999)	Overview of the Watershed Surveys and Planning Program.	Watershed Surveys and Planning Program
45	United States Department of Agriculture. USDA conservation programs - wetlands reserve program. http://www.nrcs.usda.gov/NRCSProg.html (2 Feb 1999)	Overview of this voluntary program to restore wetlands.	Wetlands Reserve Program
46	United States Department of Agriculture. USDA conservation programs - wildlife habitat incentives program (WHIP). (8 Oct 1997) http://www.ftw.nrcs.usda.gov/pl566/WHIP.html (2 Feb 1999)	Description of the WHIP program, benefits, and requirements.	Wildlife Habitat Incentives Program
47	United States Environmental Protection Agency. Preparing for spill. (7 Oct 1998) http://www.epa.gov/oilspill/prepare.htm (3 Nov 1998)	EPA oil spill preparedness program highlights.	
48	Watson, L. et al. 1998. Strategy for reducing risks from natural hazards in Pawtucket, Rhode Island: A multi-hazard mitigation strategy. Rhode Island Sea Grant. Narragansett, RI 44 pp.	Section 1 explains why communities are writing hazard mitigation strategies and describes the hazard assessment that was completed by city officials. Section 2 uses the risk assessment from Section 1 to determine potential mitigation actions for high-risk areas.	

Appendix G: Funding and Data Sources

This appendix contains the following sections:

Section 1.0	Includes potential funding sources specific to the hazards identified in Section 3, Hazard Identification and Vulnerability Assessment
Section 1.5	Describes the funding sources identified in Section 1 .0

This appendix partially fulfills the following FEMA requirement:

Requirement §201.6(c)(3): The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

Requirement §201.6(c)(3)(ii): The mitigation strategy **shall** include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Requirement §201.6(c)(3)(i): The hazard mitigation strategy **shall** include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

Appendix G Section 1.0

Potential Funding Sources for Mitigation Projects/Initiatives by Hazard Type (June 2004)

Primary Mitigation Funds (All Hazards)

- Pre Disaster Mitigation (PDM) Fund
- Hazard Mitigation Grant Program (HMGP) Funds
- Flood Mitigation Assistance (FMA) Program Funds

Emergency Preparedness & Assistance Funds (EMPA)

- EMPA Competitive Grant Program
- EMPA Base Grant Program

Hurricane Mitigation Funding Sources

- Anheuser-Busch Companies, Inc.
- Bank Enterprise Award Program
- Beach Erosion Control Projects
- Business and Industry Loans
- Challenge 21, Floodplain
- Coastal Services Center
- Coastal Zone Management Administration Awards
- Coastal Wetlands Planning, Protection, and Restoration Act
- Coastal Construction Building Zone Program
- Community Development Block Grant
- Community Facilities Loans and Grants
- Community Development Block Grants/Economic Development Initiative
- Community Development Block Grants/Entitlement Grants
- Community Development Block Grants/State=s Program
- Community Development Block Grants/Small Cities Program
- Community Development Block Grants/Special Purpose Grants/Technical Assistance Program
- Conservation Plant Material Centers
- Conservation Reserve Program
- Cooperative Extension Service
- Cora Brown Fund
- Crop Insurance
- Direct Housing: Natural Disaster
- Disaster Housing Program
- Disaster Reserve Assistance
- Disaster Recovery Initiative Grants

- Economic Development - Public Works Impact Program
- Economic Injury Disaster Loans
- Emergency Loan Assistance
- Emergency Rehabilitation of Flood Control Works or Federally Authorized Coastal Protection Works
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Conservation Program
- Emergency Relief Program
- Emergency Management: State and Local Assistance
- Emergency Advance Measures for Flood Prevention
- Emergency Management Training Institute: Training Assistance
- Emergency Operations Flood Response and Post Flood Response
- Emergency Loans
- Emergency Shelter Grants Program
- Financial Assistance for Ocean Resources Conservation and Assessment Program
- Flood Control Projects
- Flood Insurance
- Flood Plain Management Services
- Habitat Conservation
- Hazard Mitigation Grant Program
- Highway Planning and Construction
- Historic Preservation Fund Grants-in-Aid
- Hurricane Program
- Impact Aid: Facilities Maintenance
- Individual and Family Grants
- John D. and Catherine T. MacArthur Foundation
- Learn and Serve America Program
- Local Initiatives Support Corporation
- Mitigation Assistance
- National Weather Service
- North American Wetlands Conservation Act Grant Program
- Outdoor Recreation: Acquisition, Development and Planning
- Physical Disaster Loans
- Planning and Program Development Grants
- Planning Assistance to States
- Project Impact: Building Disaster Resistant Communities
- Property Improvement Loan Insurance for Improving All Existing Structures and Building of New Nonresidential Structures
- Public Assistance
- Rehabilitation Mortgage Insurance
- Resource Conservation and Development
- Rural Economic Development Loans and Grants
- Snagging and Clearing for Flood Control
- Soil and Water Conservation

- Special Economic Development and Adjustment Assistance Program: Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants
- STP
- Sustainable Agriculture Research and Education
- Sustainable Development Challenge Grants
- The Community Foundation for Palm Beach and Martin Counties
- U.S. Army Corps of Engineers
- U.S. Geological Survey
- Urban Park and Recreation Recovery Program
- Wallace Global Fund
- Water Bank Program
- Watershed Surveys and Planning
- Watershed Protection and Flood Prevention Loans
- Wetlands Protection Grants
- Wetlands Program
- Wetlands Reserve Program
- Wetlands Protection: Development Grants
- Wildlife Restoration
- Wildlife Habitat Incentives Program

Flood Mitigation Funding Sources

- Anheuser-Busch Companies, Inc.
- Bank Enterprise Award Program
- Beach Erosion Control Projects
- Business and Industry Loans
- Challenge 21, Floodplain
- Coastal Services Center
- Coastal Zone Management Administration Awards
- Coastal Wetlands Planning, Protection, and Restoration Act
- Community Rating System
- Community Development Block Grant
- Community Facilities Loans and Grants
- Community Development Block Grants/Entitlement Grants
- Community Development Block Grants/State=s Program
- Community Assistance Program: State Support Services Element
- Community Development Block Grants/Small Cities Program
- Community Development Block Grants/Special Purpose Grants/Technical Assistance Program
- Conservation Technical Assistance
- Conservation Plant Material Centers
- Conservation Reserve Program
- Cooperative Extension Service
- Cora Brown Fund

- Crop Insurance
- Direct Housing: Natural Disaster
- Disaster Housing Program
- Disaster Reserve Assistance
- Disaster Recovery Initiative Grants
- Disposal of Federal Surplus Real Property for Parks, Recreation, and Historic Monuments
- Economic Development - Public Works Impact Program
- Economic Injury Disaster Loans
- Emergency Loan Assistance
- Emergency Rehabilitation of Flood Control Works or Federally Authorized Coastal Protection Works
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Conservation Program
- Emergency Relief Program
- Emergency Management: State and Local Assistance
- Emergency Advance Measures for Flood Prevention
- Emergency Management Training Institute: Training Assistance
- Emergency Operations Flood Response and Post Flood Response
- Emergency Loans
- Environmental Quality Incentives Program
- Farmland Protection Program
- Financial Assistance for Ocean Resources Conservation and Assessment Program
- Flood Control Projects
- Flood Insurance
- Flood Risk Reduction Program
- Flood Mitigation Assistance Program
- Flood Plain Management Services
- Habitat Conservation
- Hazard Mitigation Grant Program
- Highway Planning and Construction
- Historic Preservation Fund Grants-in-Aid
- Individual and Family Grants
- John D. and Catherine T. MacArthur Foundation
- Land Protection, Natural Resources Conservation Service
- Learn and Serve America Program
- Local Initiatives Support Corporation
- Mitigation Assistance
- National Flood Mitigation Fund
- National Flood Insurance Program
- National Weather Service
- North American Wetlands Conservation Act Grant Program
- Outdoor Recreation: Acquisition, Development and Planning
- Physical Disaster Loans
- Planning Assistance to States

- Project Impact: Building Disaster Resistant Communities
- Property Improvement Loan Insurance for Improving All Existing Structures and Building of New Nonresidential Structures
- Protection of Essential Highways, Highway Bridge Approaches, and Public Works
- Public Assistance
- Rehabilitation Mortgage Insurance
- Resource Conservation and Development
- Rural Economic Development Loans and Grants
- Snagging and Clearing for Flood Control
- Soil and Water Conservation
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants
- STP
- Sustainable Agriculture Research and Education
- Sustainable Development Challenge Grants
- The Community Foundation for Palm Beach and Martin Counties
- Transportation Enhancements Program
- U.S. Army Corps of Engineers
- U.S. Geological Survey
- Urban Park and Recreation Recovery Program
- Wallace Global Fund
- Water Bank Program
- Watershed Surveys and Planning
- Watershed Protection and Flood Prevention Loans
- Wetlands Protection Grants
- Wetlands Program
- Wetlands Reserve Program
- Wetlands Protection: Development Grants
- Wildlife Restoration
- Wildlife Habitat Incentives Program

Severe Thunderstorm and Lightning Funding Sources

- Community Facilities Loans and Grants
- Cooperative Extension Service
- Direct Housing: Natural Disaster
- Disaster Housing Program
- Disaster Recovery Initiative Grants
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Conservation Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Emergency Shelter Grants Program

- Hazard Mitigation Grant Program
- Individual and Family Grants
- John D. and Catherine T. MacArthur Foundation
- Learn and Serve America Program
- Local Initiatives Support Corporation
- Mitigation Assistance
- National Weather Service
- Physical Disaster Loans
- Project Impact: Building Disaster Resistant Communities
- Property Improvement Loan Insurance for Improving All Existing Structures and Building of New Nonresidential Structures
- Public Assistance
- Rehabilitation Mortgage Insurance
- State Disaster Preparedness Grants
- U.S. Army Corps of Engineers
- Wallace Global Fund

Wildfire Funding Sources

- Community Facilities Loans and Grants
- Community Development Block Grants/Economic Development Initiative
- Conservation Technical Assistance
- Cooperative Forestry Service
- Cooperative Extension Service
- Cora Brown Fund
- Direct Housing: Natural Disaster
- Disaster Housing Program
- Disaster Reserve Assistance
- Disaster Recovery Initiative Grants
- Economic Injury Disaster Loans
- Emergency Loan Assistance
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Conservation Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Emergency Loans
- Environmental Quality Incentives Program
- Florida Game and Freshwater Fish Commission Environmental Grant Program
- Hazard Mitigation Grant Program
- Individual and Family Grants
- John D. and Catherine T. MacArthur Foundation
- Learn and Serve America Program
- Local Initiatives Support Corporation
- Mitigation Assistance

- National Fire Academy Training Assistance
- National Forest: Dependent Rural Communities
- National Fire Academy Educational Program
- North American Wetlands Conservation Act Grant Program
- Outdoor Recreation: Acquisition, Development and Planning
- Physical Disaster Loans
- Project Impact: Building Disaster Resistant Communities
- Property Improvement Loan Insurance for Improving All Existing Structures and Building of New Nonresidential Structures
- Protection of Forests and Rangelands
- Public Assistance
- Rehabilitation Mortgage Insurance
- Resource Conservation and Development
- Rural Economic Development Loans and Grants
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants
- Stewardship Incentives Program
- Sustainable Development Challenge Grants
- The Community Foundation for Palm Beach and Martin Counties
- Urban Park and Recreation Recovery Program
- Wallace Global Fund
- Wildlife Restoration
- Wildlife Habitat Incentives Program

Tornado Funding Sources

- Bank Enterprise Award Program
- Business and Industry Loans
- Community Development Block Grant
- Community Development Block Grants/Entitlement Grants
- Community Development Block Grants/State's Program
- Cooperative Extension Service
- Cora Brown Fund
- Direct Housing: Natural Disaster
- Disaster Housing Program
- Disaster Recovery Initiative Grants
- Economic Injury Disaster Loans
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Conservation Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Emergency Loans
- Emergency Shelter Grants Program

- Hazard Mitigation Grant Program
- Impact Aid: Facilities Maintenance
- Individual and Family Grants
- John D. and Catherine T. MacArthur Foundation
- Learn and Serve America Program
- Mitigation Assistance
- National Weather Service
- Physical Disaster Loans
- Project Impact: Building Disaster Resistant Communities
- Property Improvement Loan Insurance for Improving All Existing Structures and Building of New Nonresidential Structures
- Public Assistance
- Rehabilitation Mortgage Insurance
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants
- Sustainable Development Challenge Grants
- The Community Foundation for Palm Beach and Martin Counties
- Wallace Global Fund

Extreme Temperatures Funding Sources

- Community Development Block Grants/State=s Program
- Cooperative Extension Service
- Crop Insurance
- Disaster Reserve Assistance
- Emergency Loan Assistance
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Conservation Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Emergency Loans
- Hazard Mitigation Grant Program
- John D. and Catherine T. MacArthur Foundation
- Learn and Serve America Program
- Local Initiatives Support Corporation
- Mitigation Assistance
- National Weather Service
- Physical Disaster Loans
- Project Impact: Building Disaster Resistant Communities
- Property Improvement Loan Insurance for Improving All Existing Structures and Building of New Nonresidential Structures
- Public Assistance
- Rehabilitation Mortgage Insurance

- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants
- Sustainable Agriculture Research and Education
- The Community Foundation for Palm Beach and Martin Counties
- Weatherization Assistance for Low-Income Persons

Soil/Beach Erosion Funding Sources

- Anheuser-Busch Companies, Inc.
- Bank Enterprise Award Program
- Beach Erosion Control Projects
- Business and Industry Loans
- Challenge 21, Floodplain
- Coastal Services Center
- Coastal Zone Management Administration Awards
- Community Development Block Grant
- Community Development Block Grants/Entitlement Grants
- Conservation Technical Assistance
- Conservation Plant Material Centers
- Conservation Reserve Program
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Conservation Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Environmental Quality Incentives Program
- Farmland Protection Program
- Financial Assistance for Ocean Resources Conservation and Assessment Program
- Hazard Mitigation Grant Program
- Land Protection, Natural Resources Conservation Service
- Learn and Serve America Program
- Mitigation Assistance
- North American Wetlands Conservation Act Grant Program
- Outdoor Recreation: Acquisition, Development and Planning
- Physical Disaster Loans
- Planning Assistance to States
- Project Impact: Building Disaster Resistant Communities
- Protection of Essential Highways, Highway Bridge Approaches, and Public Works
- Public Assistance
- Rehabilitation Mortgage Insurance
- Resource Conservation and Development
- Soil and Water Conservation
- State Disaster Preparedness Grants
- STP

- Sustainable Agriculture Research and Education
- Sustainable Development Challenge Grants
- Wallace Global Fund
- Water Bank Program
- Watershed Surveys and Planning
- Wetlands Program
- Wetlands Reserve Program
- Wetlands Protection: Development Grants

Agricultural Pest and Disease Funding Sources

- Bank Enterprise Award Program
- Community Facilities Loans and Grants
- Cooperative Extension Service
- Crop Insurance
- Disaster Reserve Assistance
- Emergency Loan Assistance
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Conservation Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Emergency Loans
- Hazard Mitigation Grant Program
- Learn and Serve America Program
- Mitigation Assistance
- Physical Disaster Loans
- Plant and Animal Disease, Pest Control, and Animal Care
- Project Impact: Building Disaster Resistant Communities
- Public Assistance
- Rural Economic Development Loans and Grants
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants

Drought Funding Sources

- Conservation Technical Assistance
- Cooperative Extension Service
- Crop Insurance
- Disaster Reserve Assistance
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Conservation Program
- Emergency Management: State and Local Assistance

- Emergency Management Training Institute: Training Assistance
- Emergency Loans
- Hazard Mitigation Grant Program
- Land Protection, Natural Resources Conservation Service
- Learn and Serve America Program
- Mitigation Assistance
- Physical Disaster Loans
- Project Impact: Building Disaster Resistant Communities
- Public Assistance
- Soil and Water Conservation
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants
- U.S. Army Corps of Engineers
- Wallace Global Fund
- Watershed Surveys and Planning

Seismic Hazards Funding Sources

- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Hazard Mitigation Grant Program
- Learn and Serve America Program
- Mitigation Assistance
- Physical Disaster Loans
- Project Impact: Building Disaster Resistant Communities
- Public Assistance
- Rehabilitation Mortgage Insurance
- State Disaster Preparedness Grants
- Sustainable Development Challenge Grants

Epidemic Funding Sources

- Cora Brown Fund
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Hazard Mitigation Grant Program
- John D. and Catherine T. MacArthur Foundation
- Learn and Serve America Program
- Mitigation Assistance
- Project Impact: Building Disaster Resistant Communities

- Public Assistance
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants
- The Community Foundation for Palm Beach and Martin Counties

Nuclear Disaster Funding Sources

- Bank Enterprise Award Program
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Emergency Shelter Grants Program
- Hazard Mitigation Grant Program
- Individual and Family Grants
- Learn and Serve America Program
- Mitigation Assistance
- Project Impact: Building Disaster Resistant Communities
- Public Assistance
- Radiation Control: Training Assistance and Advisory Counseling
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants

Power Failure Funding Sources

- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Hazard Mitigation Grant Program
- Learn and Serve America Program
- Mitigation Assistance
- Project Impact: Building Disaster Resistant Communities
- Public Assistance
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants

Hazardous Materials Accident Funding Sources

- Brownfield Pilots Cooperative Agreements
- Capitalization Grants for Drinking Water State Revolving Fund
- Emergency Management Institute: Independent Study Program

- Emergency Management Institute: Resident Educational Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Florida Coastal Protection Trust Fund
- Grants-in-Aid for Railroad Safety: State Participation
- Hazard Mitigation Grant Program
- Hazardous Waste Worker Health and Safety
- Hazardous Waste Management State Program Support
- Hazardous Materials Training Program for Implementation of the Superfund Amendment and Reauthorization Act of 1986
- Individual and Family Grants
- Interagency Hazardous Materials Public Sector Training and Planning Grants
- Learn and Serve America Program
- Mitigation Assistance
- NIEHS Hazardous Waste Worker Health and Safety Training (Superfund)
- Project Impact: Building Disaster Resistant Communities
- Public Assistance
- Railroad Safety
- State Disaster Preparedness Grants
- Water Pollution Control: State and Interstate Program Support

Transportation System Accident Funding Sources

- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Grants-in-Aid for Railroad Safety: State Participation
- Hazard Mitigation Grant Program
- Hazardous Waste Worker Health and Safety
- Hazardous Waste Management State Program Support
- Highway Planning and Construction (Federal Aid Highway Program)
- Learn and Serve America Program
- Mitigation Assistance
- Project Impact: Building Disaster Resistant Communities
- Protection of Essential Highways, Highway Bridge Approaches, and Public Works
- Public Assistance
- Railroad Safety
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants
- STP
- Transportation Enhancements Program
- Water Pollution Control: State and Interstate Program Support

Wellfield Contamination Funding Sources

- Bank Enterprise Award Program
- Brownfield Pilots Cooperative Agreements
- Capitalization Grants for Drinking Water State Revolving Fund
- Coastal Zone Management Administration Awards
- Community Development Block Grant
- Disaster Recovery Initiative Grants
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Habitat Conservation
- Hazard Mitigation Grant Program
- Learn and Serve America Program
- Mitigation Assistance
- Project Impact: Building Disaster Resistant Communities
- Public Assistance
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants
- Wallace Global Fund
- Water Pollution Control: State and Interstate Program Support
- Water Quality Program Management

Communications Failure Funding Sources

- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Hazard Mitigation Grant Program
- Learn and Serve America Program
- Mitigation Assistance
- Project Impact: Building Disaster Resistant Communities
- Public Assistance
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants

Terrorism and Sabotage Funding Sources

- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Management: State and Local Assistance

- Emergency Management Training Institute: Training Assistance
- First Responder Anti-Terrorism Training Assistance
- Hazard Mitigation Grant Program
- Learn and Serve America Program
- Local Firefighting and Emergency Services Training
- Mitigation Assistance
- Project Impact: Building Disaster Resistant Communities
- Public Assistance
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants

Civil Disturbance Funding Sources

- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Hazard Mitigation Grant Program
- Learn and Serve America Program
- Mitigation Assistance
- Project Impact: Building Disaster Resistant Communities
- Public Assistance
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants

Immigration Crisis Funding Sources

- Community Services Block Grant
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Hazard Mitigation Grant Program
- John D. and Catherine T. MacArthur Foundation
- Learn and Serve America Program
- Mitigation Assistance
- Project Impact: Building Disaster Resistant Communities
- Public Assistance
- Special Economic Development and Adjustment Assistance Program: Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants

All Hazards Funding Sources

- Economic Development - Technical Assistance
- Emergency Management Institute: Independent Study Program
- Emergency Management Institute: Resident Educational Program
- Emergency Management: State and Local Assistance
- Emergency Management Training Institute: Training Assistance
- Hazard Mitigation Grant Program
- Individual and Family Grants
- John D. and Catherine T. MacArthur Foundation
- Learn and Serve America Program
- Mitigation Assistance
- Project Impact: Building Disaster Resistant Communities
- Public Assistance
- Special Economic Development and Adjustment Assistance Program:
- Sudden and Severe Economic Dislocation and Long-Term Economic Deterioration
- State Disaster Preparedness Grants
- Wallace Global Fund

Appendix G Section 1.5: Descriptions of Potential Funding Sources

Funding Source	Objective	Eligibility	Sponsoring Organization
Pre Disaster Mitigation (PDM)	Established in response to the Disaster Mitigation Act of 2000, PDM provides funding through the National Pre Disaster Mitigation Fund to assist local governments in implementing cost-effective hazard mitigation activities that complement a comprehensive mitigation program	Mitigation projects have a Federal Share cap of $3M per project; Mitigation Planning projects have no cap. Cost share 75% Federal; 25% Non-federal. Small impoverished communities may be eligible for a 90% Federal cost-share.	Federal Emergency Management Agency
Hazard Mitigation Grant Program (HMGP)	Provides grants to local governments to implement long-term hazard mitigation measures after a major disaster declaration for the purpose of reducing the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster.	Only available to applicants that reside within a Presidentially declared disaster area. A community may apply on behalf of individuals or businesses.	Federal Emergency Management Agency
Flood Mitigation Assistance Program (FMA)	Provides funds to communities to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insured under the National Flood Insurance Program (NFIP).	Projects must, at a minimum, be: cost effective, cost-beneficial to the National Flood Insurance Fund, technically feasible, and physically located in a NFIP participating community. The project must also conform with minimum standards of the NFIP Floodplain. The Federal Share is 75% of eligible costs.	Federal Emergency Management Agency

Emergency Management & Preparedness (EMPA)	Non-recurring Competitive Awards may be made by the State Department of Emergency Management to local governments and non-profit organizations based on a competitive award process and criteria and priorities established by the state.	See eligibility criteria in Rule 9G-19.007, F.A.C.	Florida Department of Community Affairs, Division of Emergency Management
Anheuser-Busch Companies, Inc.	Supports charitable organizations active in fields of education, health care, programs for minorities and youth, cultural enrichment, and environmental protection.	Support is restricted almost entirely to cities where the company has manufacturing facilities.	Anheuser-Busch Companies, Inc. One Busch Place St. Louis, MO 63118 (314) 577-2000
Capitalization Grants for Drinking Water State Revolving Fund (Drinking Water State Revolving Fund)	State may use the Federal funds to establish new programs that emphasize preventing contamination problems through source water protection and enhanced water systems management.	States and Puerto Rico are eligible to receive capitalization grants.	James Bounne, Implementation and Assistance Division, Office of Groundwater and Drinking Water, U.S. Environmental Protection Agency, Washington, DC 20460 Phone: (202) 260-5526
Challenge 21, Floodplain	To protect floodplains.		Department of Defense U.S. Army Corps of Engineers Attn: CECW-PM DoD Washington, D.C. 20314-1000 (202) 272-0169 http://www.usace.army.mil/
Coastal Services Center (CSC)	To support projects aimed at developing a science-based, multi-dimensional approach that will allow for the maintenance or improvement of environmental quality while at the same time allowing for economic growth. In FY 96, five Fellowship Awards were made to the states of CA, CT, FL, MA, and OR. In FY 98 a cooperative agreement was awarded for an ecological and socioeconomic characterization of Kachemak Bay, AK. Uses will	State and Local Governments, Public Nonprofit Institution/Organization, Other Public Institution/Organization.	Dr. Nancy Foster, Ph.D., Assistant Administrator, NOS, 1305 East-West Highway, Silver Spring, MD 20910. Phone: (301) 713-3074.

	be in the following Center areas: Coastal Management Service (CMS): Training and Communications: training materials development and dissemination of information; Coastal Information Services (CIS): Coastal Change Analysis Program: To develop land cover and change analysis products;		
Coastal Wetlands Planning, Protection and Restoration Act	To grant funds to coastal States to carry out coastal wetlands conservation projects.	Available to all States bordering on the Atlantic, Gulf (except Louisiana), and Pacific coasts, States bordering the Great Lakes...	Department of the Interior Fish and Wildlife Service 4401 N. Fairfax Dr., Rm. 140 Arlington, VA 22203 (703) 358-2156 http://www.fws.gov
Coastal Construction Building Zone Program	This program establishes a standard to improve the resistance to hurricane-force winds of buildings in Florida=s coastal building zone. Staff trains building officials, monitors local progress in adopting ordinances, and provides technical assistance.	Compliance program only.	Rick Dixon (850) 487-1824
Community Development Block Grant	Provide for long-term needs, such as acquisition, rehabilitation, or reconstruction of damaged properties and facilities and redevelopment of disaster-affected areas. Funds may also be used for emergency response activities, such as debris clearance and demolition, and extraordinary increases in the level of necessary public services.	State governments that have elected to administer CDBG funds for non-entitlement communities. States with designated major disaster areas may receive statutory and regulatory waivers of program requirements regarding the use of regular CDBG funds which recipients designate to address the damage.	Department of Housing and Urban Development Community Planning and Development 451 7th Street, S.W. Washington, D.C. 204107 (202) 708-3587 http://www.hud.gov
The Community Foundation for Palm Beach and Martin Counties	To provide innovative responses to recognized community needs which do not unnecessarily duplicate other efforts; strive to equip people to help themselves;	Unrestricted grants are made for charitable purposes primarily to organizations based in serving Palm Beach and Martin Counties.	The Community Foundation for Palm Beach and Martin Counties 324 Datura St., Suite 340 West Palm Beach, FL 33401 Palm Beach: (561) 659-6800 Martin: (888) 832-6542

	significantly strengthen the capacity of existing institutions to reach a broader segment of the community; emphasize shared values and collective interests and action among diverse groups that have little or no history of working together; programs that are neighborhood driven.	Applicants must be exempt from income taxes under Section 501(c)(3)	e-mail: cfpbmc@aol.com
Community Rating System	Encourages state and community flood loss reduction activities beyond those required for participation in the NFIP. Flood insurance premiums are lower in those communities that undertake activities to reduce flood losses, facilitate accurate insurance rating, promote the awareness of flood insurance and protect the natural and beneficial functions of flood hazard areas.		
Community Services Block Grant	To provide services and activities having measurable and potential major impact on causes of poverty in the community.		Department of Health and Human Services, Administration for Children and Families Office of Community Services 370 L'Enfant Promenade, S.W. Washington, D.C. 220447 (202) 401-9340 http://www.acf.dhhs.gov/programs/ocs
Cooperative Extension Service	To provide information and educational material to farmers, ranchers, and others on what they can do to protect themselves and their property against the hazards associated with disasters; and advice on cleanup of damaged property, sanitation precautions, insect control, food preparation in an emergency, recovery actions on damaged farms, and renovation of damaged equipment and property.	Farmers and rural residents who have suffered losses as the result of natural disasters. There is also assistance available to producers who suffer losses as a result of crop or livestock disease or pest infestation.	http://mimosa.itc.nrcs.usda.gov/scripts/ndisapi.dll/oip_public/USA_map for a USDA service center in your area. WPB: West Palm Beach Service Center 559 N. Military tr.. West Palm Beach, FL 33415

Conservation Reserve Program	The Conservation Reserve Program reduces soil erosion, protects the Nation's ability to produce food and fiber, reduces sedimentation in streams and lakes, improves water quality, establishes wildlife habitat, and enhances forest and wetland resources. It encourages farmers to convert highly erodible cropland or other environmentally sensitive acreage to vegetative cover, such as tame or native grasses, wildlife plantings, trees, filter strips, or riparian buffers. Farmers receive an annual rental payment for the term of the multi-year contract. Cost sharing is provided to establish the vegetative cover practices.		USDA, Farm Service Agency http://mimosa.itc.nrcs.usda.gov/scripts/ndisapi.dll/oip_public/USA_map for a USDA service center in your area. WPB: West Palm Beach Service Center 559 N. Military Tr.. West Palm Beach, FL 33415
Conservation Plant Material Centers	The purpose of the program is to provide native plants that can help solve natural resource problems. Beneficial uses for which plant material may be developed include biomass production, carbon sequestration, erosion reduction, wetland restoration, water quality improvement, streambank and riparian area protection, coastal dune stabilization, and other special conservation treatment needs.		USDA, Natural Resources Conservation Service http://mimosa.itc.nrcs.usda.gov/scripts/ndisapi.dll/oip_public/USA_map for a USDA service center in your area. WPB: West Palm Beach Service Center 559 N. Military Tr.. West Palm Beach, FL 33415
Conservation Technical Assistance	The purpose of this program is to assist land-users, communities, units of stat and local government, and other Federal agencies in planning and implementing conservation systems. The purpose of the conservation systems are to	Individual land users, communities, conservation districts, and other units of State and local government and Federal agencies to meet their goals for resource stewardship and assist individuals to comply with State	Contact USDA, Natural Resources Conservation Service http://mimosa.itc.nrcs.usda.gov/scripts/ndisapi.dll/oip_public/USA_map for a USDA service center in your area. WPB: West Palm Beach Service Center 559 N. Military Tr.. West Palm Beach, FL 33415

	reduce erosion, improve soil and water quality, improve and conserve wetlands, enhance fish and wildlife habitat, improve air quality, improve pasture and range condition, reduce upstream flooding, and improve woodlands.	and local requirements.	
Disaster Recovery Initiative Grants	Provides flexible grants to help cities, counties, and States recover from Presidentially declared disasters, especially in low-income areas. Grantees may use DRI funds for recovery efforts involving housing, economic development, infrastructure and prevention of further damage. Examples include: buying damaged properties in a flood plain and relocating them to safer areas; relocation payments for people and businesses displaced by the disaster; debris removal; rehabilitation of homes and buildings damaged by the disaster; buying, constructing, or rehabilitating public buildings; and code enforcement.	States and local governments in places that have been designated by the President of the United States as disaster areas.	For a guide to DRI, contact Community Connections at 800-998-9999
Economic Development: Public Works Impact Program	To promote long-term economic development and assist in providing immediate useful work to unemployed and underemployed persons in highly distressed areas. Examples of Funded Projects: 1) Renovation of buildings, including historic preservation; 2) repairing industrial streets and roads; construction of water/sewer systems.	Eligibility is based on designation of a community or neighborhood as a redevelopment area.	David L. McIlwain, Director, Public Works Division, Economic Development Administration, Room H7326, Herbert C. Hoover Bldg., Washington, DC 20230. Phone: (202) 482-5265.
Economic Development - Technical Assistance	To promote economic development and alleviate underemployment and unemployment in distressed	Most technical assistance recipients are private or public nonprofit organizations, educational institutions,	Department of Commerce Research and National Technical Assistance Division, Economic Development Administration Rm. H7315 Herbert C. Hoover Bldg.

	areas, EDA operates a technical assistance program. The program provides funds to : (1) enlist the resources of designated university centers in promoting economic development;(2) support innovative economic development projects; (3) disseminate information and studies of economic development issues of national significance; and (4) finance feasibility studies and other projects leading to local economic development.	municipal, county, or State governments.	Washington, D.C. 20230 (202) 482-4085 http://www.doc.gov/eda
Emergency Advance Measures for Flood Prevention (Public Law 84-99 Code 500 Program)	To perform activities prior to flooding or flood fight that would assist in protecting against loss of life and damages to property due to flooding. Examples of Funded Projects: Emergency drawdown of Spirit Lake, Washington; Emergency levee construction, Utah Lake, Provo, Utah; Temporary levee raising, Cowlitz River, Washington; and levee setback, Red River, Louisiana. Authorized assistance includes work such as removal of waterway obstructions, work necessary to prevent dam failure, and work necessary to prepare for abnormal snowmelt. There must be an immediate threat of unusual flooding present before advance measures can be considered. Any work performed under this program will be temporary in nature and must have a favorable benefit cost ratio.	The Governor of the affected State must request assistance. All persons living in areas subject to floods.	U.S. Army Corps of Engineers, Attn: CECW-OE, Washington, DC 20314. Phone: (202) 272-0251
Emergency Loans	To assist established (owner or tenant) family farmers, ranchers and aquaculture operators with	Must meet requirements.	Department of Agriculture, Farm Service Agency, Director, Loan Making Division, Ag Box 0522, Washington, DC 20250. Phone: (202) 720-1632.

	loans to cover losses resulting from major and/or natural disasters, which can be used for annual farm operating expenses, and for other essential needs necessary to return disaster victim=s farming operations to a financially sound basis in order that they will be able to return to private sources of credit as soon as possible. Loan funds may be used to repair, restore, or replace damaged or destroyed farm property and supplies which were lost or damaged as a direct result of a natural disaster;		
Emergency Operations Flood Response and Post Flood Response (Public Law 84-99 Code 200 Program	To provide emergency flood response and post flood response assistance as required to supplement State and local efforts and capabilities in time of flood or coastal storm. Emergency assistance is provided in all phases of flood response and post flood response to supplement State and local efforts.	State or local public agencies for flood response and the State for post flood response.	Commander, U.S. Army Corps of Engineers, Attn: CECW-OE, Washington, DC 20314-1000. Phone: (202) 272-0251.
Emergency Rehabilitation of Flood Control Works or Federally Authorized Coastal Protection Works (Public Law 84-99, Code 300 Program)	To assist in the repair and restoration of flood control works damaged by flood, or federally authorized hurricane flood and shore protection works damaged by extraordinary wind, wave, or water action. Authorized assistance includes emergency repair or rehabilitation of flood control works damaged by flood, and restoration of federally authorized coastal protection structures damaged by extraordinary wind, wave, or water action.	Owners of damaged flood protective works, or State and local officials of public entities responsible for their maintenance, repair, and operation must meet current guidelines to become eligible for Public law 84-99 assistance:	Commander, U.S. Army Corps of Engineers, Attn: CECW-OE, Washington, DC 20314. Phone: (202) 272-0251.

Emergency Shelter Grants Program	The program is designed to help improve the quality of emergency shelters and transitional housing for the homeless, to make available additional shelters, to meet the costs of operating shelters, to provide essential social services to homeless individuals, and to help prevent homelessness.	States, metropolitan cities, urban counties, and territories. Local governments and no-profit organizations may also apply for ESG funds directly from States. The territories receive their allocations based on their population size.	Community Planning and Development, Department of Housing and Urban Development Office of Special Needs Assistance Programs 451 7th St. SW, Rm. 7254 Washington, D.C. 20410 (202) 708-4300
Emergency Relief Program	To assist State transportation agencies in the planning and development of an integrated, interconnected transportation system important to interstate commerce and travel by constructing and rehabilitating the National Highway System, including the Interstate System; and for transportation improvements to all public roads except those classified as local or rural minor collectors; to provide aid for the repair o Federal-aid Roads following disasters; to foster safe highway design; to replace or rehabilitate deficient or obsolete bridges; and to provide for other special purposes.		Department of Transportation Federal Highway Administration Director, Office of Engineering Federal Highway Administration 400 7th St. SW Washington, D.C. 20590 (202) 366B4853 http://www.fhwa.dot.gov/
Emergency Loan Assistance	To restore or replace essential physical property, such as animals, fences, equipment, orchard trees, etc.; pay all or part of production costs associated with the disaster year; pay essential family living expenses; reorganize the farming operation; and refinance debts.	Emergency loans are available to qualifying ranchers and farmers.	http://www.fsa.usda.gov/pas/disaster/em.htm
Emergency Rehabilitation of Flood Control Works or Federally	To assist in the repair and restoration of flood control works damaged by flood, or federally authorized hurricane flood and		Department of Defense U.S. Army Corps of Engineers Attn: CECW-PM DoD Washington, D.C. 20314-1000

Authorized Coastal Protection Works	shore protection works damaged by extraordinary wind, wave, or water action.		(202) 272-0169 http://www.usace.army.mil/
Financial Assistance for Ocean Resources Conservation and Assessment Program	To determine the long-term consequences of human activities which affect the coastal and marine environment; to assess the consequences of these activities in terms of ecological, economic, and social impacts upon human, physical and biotic environments, and to define and evaluate management alternatives which minimize adverse consequences of human use of the coastal and marine environments and resources.	Universities, colleges, technical schools, institutes, laboratories, State and local government agencies, public or private, profit or non-profit entities or individuals.	Department of Commerce Office of Ocean Resources Conservation and Assessment, National Ocean Service, National Oceanic and Atmospheric Administration 1305 East-West Hwy Silver Springs, MD 20910 (301) 713-2989 http://www.noaa.gov
Flood Control Projects (Small Flood Control Projects)	To reduce flood damages through projects not specifically authorized by Congress. Corps of Engineers designs and constructs the projects. Provides a cash contribution for land enhancement benefits and for project costs assigned to project features other than flood control; prevent future encroachment which might interfere with proper functioning of the project for flood control; and, maintain the project after completion.	States, political subdivisions of States, or other responsible local agencies established under State law with full authority and ability to undertake necessary legal and financial responsibility.	U.S. Army Corps of Engineers, Attn: CECW-PM, Washington, DC 20314-1000. Phone: (202) 272-1975.
Flood Mitigation Assistance (FMAP) Program Planning Grants	To assist States and communities in implementing measures to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes, and other structures insurable under the National Flood Insurance Program (NFIP). Examples of funded projects, are published in a Biennial Report to Congress as required under Section 554 of the National Flood Insurance Reform	Eligible applicants Technical Assistance Grants are State agencies or departments that are responsible for administering the FMA program. Eligible applicants for Planning Grants are States and communities participating in the NFIP.	Mr. Robert F. Shea, Jr., Program Support Division, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472. Phone: (202) 646-3619.

	Act (NFIRA). This report is available from Mr. Robert F. Shea, Jr., Program Support Division, Federal Emergency Management Agency (FEMA), 500 C Street, S.W., Washington, DC 20472. Phone: (202) 646-3619. Planning Grants may be used to assist States and communities in developing and updating Flood Mitigation Plans. Eligible activities under this grant are: conducting local planning discussions, contracting for consulting technical services such as engineering and planning; surveying structures at risk; and assessing structures subject to repetitive flood loss. Eligible activities under this grant are: the acquisition, relocation, elevation or dry-floodproofing of insured structures; minor structural projects; and beach nourishment activities.		
Flood Plain Management Services (FPMS)	To promote appropriate recognition of flood hazards in land and water use planning and development through the provision of flood and flood plain related data, technical services, and guidance. Available information identifies areas subject to flooding and flood losses from streams, lakes, and oceans and describes flood hazard at proposed building sites. It can be used as a basis for planning flood plain use, for flood emergency preparedness planning, for hurricane evacuation and preparedness planning, for assistance in developing flood plain	States, political subdivisions of States, other nonfederal public organizations and the public.	U.S. Army Corps of Engineers, Attn: CECW-PF, Washington, DC 20314-1000. Phone: (202) 761-0169.

	regulations, for setting elevations for flood proofing, and implementing flood proofing measures, and for indicating areas to be acquired for open space. Services are available to States and local governments without charge, but within annual funding limitations on request.		
Flood Risk Reduction Program	The Flood Risk Reduction Program was established to allow farmers who voluntarily enter into contracts to receive payments on lands with high flood potential. In return, participants agree to forego certain USDA program benefits. These contract payments provide incentives to move farming operations from frequently flooded land.		USDA, Farm Service Agency http://mimosa.itc.nrcs.usda.gov/scripts/ndisapi.dll/oip_public/USA_map for a USDA service center in your area. WPB: West Palm Beach Service Center 559 N. Military Tr.. West Palm Beach, FL 33415
Flood Insurance	To enable persons to purchase insurance against physical damage to or loss of buildings and/or contents therein caused by floods, mudslide, or flood-related erosion, thereby reducing Federal disaster assistance payments, and to promote wise floodplain management practices in the Nation=s flood-prone and mudflow-prone areas.	Any State of political subdivision with authority to adopt floodplain management practices. Beneficiaries may include: residents, business, and property owners in applicant community, in which like States can insure municipal structures.	Federal Emergency Management Agency Federal Insurance Administration Washington, D.C. 20472 (202) 646-2781 http://www.fema.gov/nfip
Florida Coastal Protection Trust Fund	The purpose is to provide a mechanism to have financial resources immediately available for prevention of, and cleanup and rehabilitation after, a pollutant discharge, to prevent further damage by the pollutant, and to pay for damages.		Florida Statutes http://www.leg.state.fl.us/citizen/documents/statutes/1993/CHAPTER_376_11.html
Hazard Mitigation Grant Program	To prevent future losses of lives and property due to disasters; to implement State or local hazard	State and local governments; certain private and nonprofit organizations or institutions;	Federal Emergency Management Agency Mitigation Directorate 500 AC@ St., S.W.

	mitigation plans; to enable mitigation measures to be implemented during immediate recovery from a disaster; and to provide funding for previously identified mitigation measures to benefit the disaster area.	Indian tribes or authorized tribal organizations; and native villages or organizations.	Washington, D.C. 20472 (202) 646-4621 http://www.fema.gov/mit/
Hazardous Waste Management State Program Support	To assist State governments in the development and implementation of an authorized hazardous waste management program for the purpose of controlling the generation, transportation, treatment, storage and disposal of hazardous wastes. State project to develop a hazardous waste program designed to meet the substantive and procedural requirements of an Aauthorized@ program. (Section 3006).	State agencies responsible for hazardous waste management within the 50 States.	Grants Administration Division (3903R), Environmental Protection Agency, Washington, DC 20460
Hazardous Waste Worker Health and Safety	To assist organizations in the development of institutional competency through appropriate training and education to hazardous waste workers.		Department of Health and Human Services, Public Health Service National Institutes of Health Office of Extramural Outreach and Information National Institutes of Health 6701 Rockledge Dr., MSC 7910 Bethesda, MD 20892-7910 (301) 435-7910 http://www.nih.gov/
Historic Preservation Fund Grants-in-Aid	(1)To provide matching grants to States for the identification, evaluation, and protection of historic properties by such means as survey, planning technical assistance, acquisition, development, and certain Federal Tax incentives available for historic properties;(2) to provide matching grants to States to expand the National Register of Historic Places; (3)to provide matching grants to the National Trust or Historic Preservation for	State and local governments, public and private nonprofit organizations and individuals.	Department of the Interior National Park Service, Preservation Heritage Services Division 1849 C Street, NW Washington, D.C. 20240 (202) 343-6004

	its congressionally chartered responsibilities to preserve historic resources.		
Hurricane Program	To significantly reduce the loss of life, property, economic disruption, and disaster assistance costs resulting form hurricanes.	Texas, Louisiana, Mississippi, Alabama, Florida...	Federal Emergency Management Agency Mitigation Directorate 500 AC@ St., SW Washington, D.C. 20472 (202) 646-4621 http://www.fema.gov/mit
John D. and Catherine T. MacArthur Foundation	Initiates programs and supports their purposes including community development activities in Palm Beach County, Florida.	Open to non-profit, tax-exempt organizations	John D. and Catherine T. MacArthur Foundation Program Area, Grants Management, Research and Information 140 S. Dearborn St., Suite 1100 Chicago, IL 60603-5285 (312) 726-8000 e-mail: 4answers@macfdn.com
Land Protection, Natural Resources Conservation Service	The Natural Resources Conservation Service (NRCS) provides technical and financial assistance for runoff retardation and soil erosion prevention as needed to reduce hazards to life and property from floods, drought, and the products of erosion on any watershed impaired by a natural disaster. NRCS provides technical assistance for rehabilitation of land anc conservation systems for which FSA provides cost-sharing; and emergency protection to assist in relieving imminent hazards to life and property from floods and products of erosion created by natural hazards that are causing a sudden impairment of a watershed.		http://mimosa.itc.nrcs.usda.gov/scripts/ndisapi.dll/oip_public/USA_map for a USDA service center in your area. WPB: West Palm Beach Service Center 559 N. Military Tr.. West Palm Beach, FL 33415
Local Firefighting and Emergency Services Training	To provide specialized training and equipment to enhance the capability of metropolitan fire and emergency service departments to respond to terrorist attacks. To	Applicants requesting funding must have the capability to develop and provide training for fire and emergency service personnel that will prepare	Office of State and Local Domestic Preparedness Support, Office of Justice Programs, Department of Justice, 633 Indiana Ave., NE., Washington, DC 20531. Phone: (202) 616-2920.

	enhance readiness and preparedness of fire and emergency services personnel to respond to terrorist incidents of mass destruction where incendiary devices, nuclear, biological or chemical agents are utilized.	them to respond to a terrorist incident.	
Local Initiatives Support Corporation	Helps existing community development groups revitalize urban neighborhoods throughout the country. By combining investments, technical assistance, and grants, LISC seeks to increase the ability of experienced local development groups to design projects of significant scale, raise and manage necessary capital, and work effectively with their natural allies in the private sector.	AAvailable upon request.@	John Mascotte, Chairman of the Board, or Paul S. Grogan, President Local Initiatives Support Corporation 733 3rd Ave. New York, NY 10017 (212) 455-9800
National Fire Academy Educational Program	To increase the professional level of the fire service and others responsible for fire prevention and control. Students are provided an opportunity to attend courses at the National Fire Academy resident facility or at a convenient off-campus location with a minimal cost to the individual or the fire department represented. The increase in the number of students attending impacts on increasing the professional level o f fire service personnel. Training is provided at the resident facility in Emmitsburg, Maryland, and in the field in cooperation with State or local fire training agencies on specific subjects to specific audience.	Any individual who is a member of a fire department or has significant responsibility for fire prevention and control.	National Emergency Training Center, Educational and Technology Services Branch, 16825 S. Seton Ave., Emmitsburg, MD 21727. Phone: (301) 447-1000.

National Fire Academy Training Assistance (Student Stipend Reimbursement Program)	To provide travel stipends to students attending Academy courses. Examples of Funded Projects: Students are provided an opportunity to attend courses at the National Fire Academy resident facility with a minimal cost to the individual or the fire department represented. The increase in the number of students attending impacts on increasing the professional level of fire service personnel.	Any student who is a member of a fire department or has significant responsibility for fire prevention and control and has been accepted in to a eligible course at the National Fire Academy may apply for stipend reimbursement.	National Emergency Training Center, Educational and Technology Services Branch, 16825 S. Seton Ave., Emmitsburg, MD 21727. Phone: (301) 447-1035.
National Flood Insurance Program	Provides federally-backed flood insurance to those who generally were not able to obtain it from the private-sector companies, and to promote sound floodplain management practices in flood prone areas.		
National Flood Mitigation Fund	To fund activities designed to reduce the risk of flood damage.	States and units of local government. Local governments must be participating in the National Flood Insurance Program.	Federal Emergency Management Agency Mitigation Directorate 500 AC@ St., SW Washington, D.C. 20472 (202) 646-4621 http://www.fema.gov/mit
National Weather Service	Provides weather and flood warnings, public forecasts and advisories for all of the United States and territories. Technical assistance is provided to local, regional, and state agencies developing and operating warning programs.		National Weather Service, National Oceanic and Atmospheric Administration 1325 East-West Highway Silver Spring, FM 20910 http://www.nws.noaa.gov
NIEHS Hazardous Waste Worker Health and Safety Training (Superfund Worker Training Program)	To provide cooperative agreements and project grant support for the development and administration of model worker health and safety training programs consisting of classroom and practical health and safety	A public or private nonprofit entity providing worker health and safety education and training may submit an application and receive a cooperative agreement or project grant for support of	Grants Management Contact: Dorothy G. Williams, Grants Management Officer, Grants Management Branch, Division of Extramural Research and Training, National Institute of Environmental Health Sciences, National Institutes of Health, Department of Health and Human Services, P.O. Box 12233, Research Triangle Park, NC 27709. Phone: (919) 541-2749, E-mail: Williams@niehs.nih.gov.

	training of workers and their supervisors, who are engaged in activities related to hazardous materials, hazardous waste generation, treatment, storage, disposal, removal, containment, transportation, or emergency response. Programs provide health and safety training and education for occupational population involved in waste handling and processing at active and inactive hazardous substance treatment, storage, and disposal facilities; cleanup, removal, containment, or remedial action at waste sites; hazardous substance emergency response; hazardous substance disposal site risk assessment and investigation, remedial actions or clean-up by state and local personnel; and transportation of hazardous wastes.	waste worker education and training by a named principal investigator. Nonprofit organizations which are incorporated under 501(c)(4) are prohibited from receiving grants.	
NIEHS Superfund Hazardous Substances: Basic Research and Education (NIEHS Superfund Research Program)	It is intended to integrate advanced or graduate training into the multidisciplinary research program to provide for training in: (1) environmental and occupational health and safety; (2) the engineering aspects of hazardous waste control; and (3) graduate training in the geosciences. This interdisciplinary program supports basic research in the following: (1) development and use of methods and technologies to detect hazardous substances in the environment; (2) development of advanced techniques for the detection, assessment, and evaluation of the effects of human health presented by	An accredited institution of higher education, as defined in the Higher Education Act, 20 U.S.C. (annotated) 3381, may submit an application and receive a grant for support of research by a named principal investigator. Nonprofit organizations which are incorporated under 501(c) (4) are prohibited from receiving grants.	Grants Management Contact: Dorothy G. Williams, Grants Management Officer, Department of Health and Human Services, P.O. Box 12233, Research Triangle Park, NC 27709. Phone: (919) 541-2749; E-mail: Williams@niehs.nih.gov.

	hazardous substances; and (4) the development and use of basic biological, chemical, and physical methods and technologies to reduce the amount of toxicity of hazardous substances.		
North American Wetlands Conservation Act Grant Program	The North American wetlands conservation Act Grant program promotes long-term conservation of North American wetland ecosystems, and the waterfowl and other migratory birds, fish and wildlife that depend upon such habitat. Principal conservation actions supported by NAWCA are acquisition, enhancement and restoration of wetlands and wetlands-associated habitat. The program encourages voluntary, pubic-private partnerships to conserve North American wetland ecosystems by creating an infrastructure and providing a source of funding.	Public or private, profit or non-profit entities or individuals establishing pubic-private sector partnerships.	Department of the Interior Fish and Wildlife Service, North American Waterfowl and Wetlands Office 4401 N. Fairfax Dr., Rm. 110 Arlington, VA 22203 (703) 358-1784 http://www.fws.gov/~r9nawwo/homepag.html
Outdoor Recreation: Acquisition, Development and Planning (Land and Water Conservation Fund Grants)	To provide financial assistance to the States and their political subdivisions for the preparation of Statewide Comprehensive Outdoor Recreation Plans (SCORPs) and acquisition and development of outdoor recreation areas and facilities for the general public, to meet current and future needs. Examples of Funded Projects: Acquisition and development grants may be used for a wide range of outdoor recreation projects, such as picnic areas, inner city parks, campgrounds, tennis courts, boat launching ramps, bike trails, outdoor	For planning grants, only the State agency formally designated by the Governor or State law as responsible for the preparation and maintenance of the Statewide Comprehensive Outdoor Recreation Plan is eligible to apply. For acquisition and development grants, the above designated agency may apply for assistance for itself, or on behalf of other State agencies or political subdivisions, such as cities, counties, and park districts.	Chief, Recreation Program, National Park Service, (2225), Department of the Interior, 1849 C Street, N.W., Room 3624, Washington, DC 20240. Phone: (202) 565-1133.

	swimming pools, and support facilities such as roads, water supply, etc.		
Planning Assistance to States (Section 22)	To cooperate with any State in the preparation of comprehensive plans for the development, utilization and conservation of water and related land resources of drainage basins located within the boundaries of such State. The State must have a planning program for the development, utilization or conservation of the water and related land resources underway or laid out in sufficient detail so that the relationship of a State=s request for Corps input for some particular aspect of the program may be appraised.	The 50 States.	U.S. Army Corps of Engineers, Attn: CECW-PF, Washington, DC 20314-1000. Phone: (202) 272-0169.
Planning Assistance to States Program	To assist the states in the preparation of comprehensive plans for the development, utilization, and conservation of water and related land resources. Floodplain management services intended to assist states in planning related to water supply, water quality, water conservation, environmental restoration and enhancement, hydropower development, flood control, or erosion and navigation.	States, District of Columbia, U.S. Territories, and federally recognized Indian tribes.	Department of Defense U.S. Army Corps of Engineers Attn: CECW-PM DoD Washington, D.C. 20314-1000 (202) 272-0169 http://www.usace.army.mil/
Property Improvement Loan Insurance for Improving All Existing Structures and Building of New Nonresidential Structures (Title I)	To facilitate the financing of improvements to homes and other existing structures and the building of new nonresidential structures. Insured loans may be used to finance alterations, repairs, and improvements for existing structures and the building of new nonresidential structures which substantially protect or improve the basic	Eligible borrowers include the owner of the property to be improved, lessee having a lease extending at least 6 months beyond maturity of the loan, or a purchaser of the property under a land installment contract.	Persons are encouraged to contact the Homeownership Center serving their State, or nearest local HUD Office.

	livability or utility of the properties.		
Protection of Essential Highways, Highway Bridge Approaches, and Public Works (Emergency Bank Protection)	To provide bank protection of highways, highway bridges, essential public works, churches, hospitals, schools, and other nonprofit public services endangered by flood-caused erosion. Reinforced barriers at either side of bridge approachmentS. Corps of Engineers designs and constructs the project. Nonfederal sponsor must share in projects costs, including cash and lands, easements, right-of-way; utility relocations; hold and save the United States free from damages; and maintain the project at local cost after completion.	States, political subdivisions of States or other responsible local agencies established under State law with full authority and ability to undertake necessary legal and financial responsibilities.	U.S. Army Corps of Engineers, Attn: CECW-PM, Washington, DC 20314-1000. Phone: (202) 272-1975.
Protection of Forests and Rangelands	The Forest Service (FS) sets priorities, establishes policies, and provides financial and technical assistance to State Foresters. The FS provides technical and financial assistance to State Foresters in mitigating and improving their fire suppression capability, and serves as a technical fire advisor to FEMA in the Fire Suppression Assistance Program.	Federal, State agencies and organizations, State and private lands	http://mimosa.itc.nrcs.usda.gov/scripts/ndisapi.dll/oip_public/USA_map for a USDA service center in your area. WPB: West Palm Beach Service Center 559 N. Military Tr.. West Palm Beach, FL 33415
Public Assistance	To provide supplemental assistance to States, local governments, and certain private nonprofit organizations to alleviate suffering and hardship resulting from major disasters or emergencies declared by the President.	State and local governments and any political subdivision of a State, Indian tribes, and native villages are eligible. Also eligible are private nonprofit organization that operate educational, utility, emergency, or medical facilities, provide custodial care or other essential services of governmental nature to the general public.	Federal Emergency Management Agency Infrastructure Support Division, Response and Recovery Directorate 500 AC@ St., S.W. Washington, D.C. 20472 (202) 646-3026 http://www.fema.gov/mit/

Radiation Control: Training Assistance and Advisory Counseling	To assist States in achieving, maintaining, and improving their capabilities to conduct radiation control programs. This will assure that State programs established through agreements with NRC for transfer of certain NRC regulatory authority over atomic energy materials to the States will continue to be adequate to protect health and safety and be compatible with NRC=s regulatory program. Training is made available to personnel of State and local governments in order to improve the radiological health training of staff members responsible for carrying out radiation control programs. Courses are provided in health physics and radiation protection, safety aspects of using radioactive materials, regulatory practices and procedures, and compliance inspection.	State and local government agencies which are or will be responsible for administering radiation control programs under and agreement with NRC for assumption by the State of regulatory authority initially exercised by the NRC.	Brenda Usilton, Office of State Programs, Nuclear Regulatory Commission, Washington, DC 20555. Phone: (301) 415-2348.
Rehabilitation Mortgage Insurance (203(k)	To help families repair or improve, purchase and improve, or refinance and improve existing residential structures more than one year old. HUD insures lenders against loss on loans. These loans may be used to rehabilitate an existing 1 to 4 unit dwelling in one of four ways: (1) Purchase a structure and the land on which the structure is located and rehabilitate it; (2) purchase a structure on another site, move it onto a new foundation on the mortgaged property and rehabilitate it; (3) refinance the existing indebtedness and	Individual purchasers or investors are eligible to apply.	Persons are encouraged to contact the Homeownership Center serving their State, or the nearest local HUD Office.

	rehabilitate such a structure; or (4) rehabilitate such a structure.		
Small Cities Community Development Block Grant Program	Provides funds to rural communities to improve local housing, streets, utilities, and public facilities. The Section 108 Loan Guarantee Program offers local governments a source of financing for economic development, large-scale public facility projects, and public infrastructure.		Ian Smith (850) 922-1870 Susan Cook (850) 487-3644 Rick Stauts, Planning Manager with the Department of Community Affairs (850) 487-3644
Snagging and Clearing for Flood Control (Section 208)	To reduce flood damages. Corps of Engineers designs and constructs the project. The nonfederal sponsor must provide all lands, easements and rights-of-way; provide all project costs in excess of the Federal limit of $500,000; agree to maintain project after construction; hold and save the United States free from damages; provide a contribution toward construction costs for land enhancement or special benefits; agree to prevent future encroachment which might interfere with proper functioning of the project for flood control.	States, political subdivisions of States or other responsible local agencies established under State law with full authority and ability to undertake necessary legal and financial responsibilities.	U.S. Army Corps of Engineers, Attn: CECW-PM, Washington, DC 20314-1000. Phone: (202) 272-1975.
Special Economic Development and Adjustment Assistance Program - Sudden and Severe Economic Dislocation (SSED) and Long Term Economic Deterioration (LTED)	To assist State and local areas develop and/or implement strategies designed to address structural economic adjustment problems resulting from sudden and severe economic dislocation such as plant closings, military base closures and defense contract cutbacks, and natural disasters (SSED), or from long-term economic deterioration in the area=s economy (LTED).	States, cities, counties, or other political subdivisions of a State, consortia of such political subdivisions, public or private nonprofit organizations representing redevelopment areas designated under the Public Works and Economic Redevelopment Act of 1965, Economic Development Districts established under Title IV of the Act, and Indian tribes.	Department of Commerce Economic Adjustment Division, Economic Development Administration Room H7327, Herbert C. Hoover Bldg. Washington, D.C. 20230 (202) 482-26659 http://www.doc.gov/eda/

State Disaster Preparedness Grants (Disaster Preparedness Improvement Grants)	To assist States in developing and improving State and local plans, programs, and capabilities for disaster preparedness and prevention. Improvement grants have produced a variety of products such as mitigation training courses, enhanced State preparedness efforts, revised assistance and hazard mitigation plans.	All States are eligible.	C. Dwight Poe, State and Local Preparedness, Training, and Exercises Directorate, Federal Emergency Management Agency, Washington, DC 20472. Phone: (202) 646-3492.
Stewardship Incentives Program	The Stewardship Incentive Program provides technical and financial assistance to encourage non-industrial private forest landowners to keep their lands and natural resources productive and healthy. Qualifying land includes rural lands with existing tree cover or land suitable for growing trees and which is owned by a private individual, group, association, corporation, Indian tribe, or other legal private entity. Eligible landowners must have an approved Forest Stewardship Plan and own 1,00 or fewer acres of qualifying land. Authorization may be obtained for exceptions of up to 5,000 acres.		USDA, Forest Service http://mimosa.itc.nrcs.usda.gov/scripts/ndisapi.dll/oip_public/USA_map for a USDA service center in your area. WPB: West Palm Beach Service Center 559 N. Military Tr.. West Palm Beach, FL 33415
STP	The STP provides flexible funding that may be sued by States and localities for projects on any Federal-aid highway, including the NHS, bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities. A portion of funds reserved for rural areas may be		Florida Department of Transportation

	spent on rural minor collectors. Eligible activities include: environmental restoration and pollution abatement projects, including retrofit or construction of stormwater treatment facilities; natural habitat mitigation.		
Sustainable Development Challenge Grants	To (1) catalyze community-based and regional projects and other actions that promote sustainable development, thereby improving environmental quality and economic prosperity; (2) leverage significant private and public investments to enhance environmental quality by enabling community sustainability efforts to continue past EPA funding; (3) build partnerships that increase a community=s long-term capacity to protect the environment through sustainable development; and (4) enhance EPA=s ability to provide assistance to communities and promote sustainable development, through lessons. Examples of Funded Projects: AFrom Grassroots to Tree Roots - Sustaining Forestry in New Hampshire@ promotes using better forest management practices to protect environmental quality and sustain the State=s timber industry. AMid-City Green Project Building Materials Exchange@ will expand its current Paint Exchange into a full-scale Building materials Exchange to reduce the amount of discarded construction materials waste in the New Orleans area and encourage urban renewal. This will be accomplished through	Eligible applicants include community groups and other nonprofit organizations, local governments, universities, tribes, and States.	Office of Air and Radiation, Environmental Protection Agency, Program Contact: Pamela Hurt. Phone: (202) 260-2441.

	construction materials recovery, transformation, and low-cost resale; neighborhood rehabilitation promotion; creative reuse; and education.		
Transportation Enhancements Program	Transportation enhancements are transportation-related activities that are designed to strengthen the cultural, aesthetic, and environmental aspects of the Nation=s Intermodal transportation system. Eligible projects include environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity.		Florida Department of Transportation
Urban Park and Recreation Recovery Program	To provide Federal grants to local governments for the rehabilitation of recreation areas and facilities, demonstration of innovative approaches to improve park system management and recreation opportunities, and development of improved recreation planning. Rehabilitation grants have been awarded to renovate a wide variety of existing community park and recreation facilities. Innovation grants have been awarded to demonstrate unique and cost-effective methods for providing better recreation services.	Eligible applicants are cities and counties meeting the eligibility requirements. Eligibility is based on need, economic and physical distress, and the relative quality and condition of urban recreation facilities and systems.	National Park Service, Recreation Programs, 1849 C Street, N.W., Room 3624, Washington, DC 20240. Contact: Ken Compton, Phone: (202) 565-1133.
U.S. Army Corps of Engineers	Provide planning and technical assistance to local governments to address local flood problems. The Floodplain Management Service Program and Planning Assistance to States Program can help local governments		http://www.usace.army.mil http://www.saw.usace.army.mil

	develop their own plans and initiate floodplain management actions. Under these programs the Corps can provide flood data and carry out certain local studies.		
U.S. Geological Survey	Assists states and local governments in maintaining stream gauge stations. In addition, the agency has prepared inundation maps in many communities. These quadrangle floodplain maps of flood prone areas are often used to delineate the approximate floodplain boundaries on the maps FEMA has provided to local governments.		Florida Geological Survey http://www.usgs.gov
Wallace Global Fund	The Wallace Global Fund supports initiatives which promise to advance globally sustainable development in some fundamental way. The Fund seeks to maximize its impact by investing its resources in projects that meet the following criteria: Tackle root problems that impede progress toward a sustainable future; propose compelling strategies for promoting environmentally and/or socially sustainable development, such as leveraging additional financial resources, catalyzing policy change, implementing innovative programs; offer potential for significant impact at the global level; and require private money, at least initially.		http://www.wgf.org/program_criteria.html
Water Pollution Control: State and Interstate Program Support (106	To assist States and interstate agencies in establishing and maintaining adequate measures for prevention and control of	Eligible entities include State and interstate water pollution control agencies as defined in the Federal Water Pollution	Carol Crow, State and Interstate Agencies, Section 106 Coordinator, Section 106, Office of Wastewater Management (4201), Office of Water, EPA, Washington, 20460. Phone: (202) 260-6742.

Grants)	surface and ground water pollution. Grants are made to States and Tribes for the administration of State and Tribal programs for the prevention, reduction and control of pollution. Activities funded include administration of State and Tribal Water Quality Standards programs; NPDES permit programs; and compliance and enforcement, monitoring and hazardous materials spills response. Broad support for the prevention and abatement of surface and ground water pollution from point and nonpoint sources including water quality planning, monitoring, water quality standards, assessments, permitting, pollution control studies, planning, surveillance and enforcement; advice and assistance to local agencies; training; and public information.	Control Act.	
Water Quality Program Management	To improve water quality.		Environmental Protection Agency Office of Water Office of Wastewater Management (4201), Office of Water Washington, D.C. 20460
Watershed Protection and Flood Prevention	To provide technical and financial assistance in carrying out works of improvement to protect, develop, and utilize the land and water resources in small watersheds.	Any State agency, county or groups of counties, municipality, town or township, soil and water conservation district, flood prevention or flood control district, Indian tribe or tribal organization, or any other non-profit agency with authority under State law to carry out, maintain, and operate watershed works of improvement may apply for assistance.	US Department of Agriculture Natural Resources Conservation Service P.O. Box 2890 Washington, D.C. 20013

Watershed Protection and Flood Prevention Loans	To provide loan assistance to sponsoring local organizations in authorized watershed (WS) areas for share of cost for works of improvement.	(1) Be a sponsoring local organization, such as a municipal corporation, soil and water conservation district, or other organization not operated for profit in the approved watershed project; and (2) have authority under State law to obtain, give security for, and raise revenues to repay the loan and to operate and maintain the facilities to be financed with the loan.	Department of Agriculture Water and Waste Rural Utilities Service Washington, D.C. 20250 (202) 690-2670
Watersheds Operations -Small Watershed Program and Flood Prevention Program (WF08 or FP 03)	The Small Watershed Program works through local government sponsors and helps participants solve natural resource and related economic problems on a watershed basis. Projects include watershed protection, flood prevention, erosion and sediment control, water supply, water quality, fish and wildlife habitat enhancement, wetlands creation and restoration, and public recreation in watersheds of 250,000 or fewer acres. Both technical and financial assistance are available.		USDA, Natural Resources Conservation Service http://mimosa.itc.nrcs.usda.gov/scripts/ndisapi.dll/oip_public/USA_map for a USDA service center in your area. WPB: West Palm Beach Service Center 559 N. Military Tr.. West Palm Beach, FL 33415
Wetlands Program	To protect natural wetlands.		Department of Defense U.S. Army Corps of Engineers Attn: CECW-PM DoD Washington, D.C. 20314-1000 (202) 272-0169 http://www.usace.army.mil/
Wetlands Protection Grants	To assist States and Indian tribes in developing new or enhancing existing wetlands protection programs.	States, Indian tribes, and local governments	Environmental Protection Agency Office of Water Office of Wastewater Management (4201), Office of Water Washington, D.C. 20460
Wetlands Reserve Program	The Wetlands Reserve Program is a voluntary program to restore wetlands. Participating		USDA, Natural Resources Conservation Service http://mimosa.itc.nrcs.usda.gov/scripts/ndisapi.dll/oip_public/USA_map for a

	landowners can establish conservation easements of either permanent or 30-year duration, or can enter into restoration cost-share agreements where no easement is involved.		USDA service center in your area. WPB: West Palm Beach Service Center 559 N. Military Tr.. West Palm Beach, FL 33415
Watershed Surveys and Planning	The purpose of the program is to assist Federal, State, and local agencies and tribal governments to protect watersheds form damage caused by erosion, floodwater, and sediment and to conserve and develop water and land resources. Resource concerns addressed by the program include water quality, opportunities for water conservation, wetland and water storage capacity, agricultural drought problems, rural development, municipal and industrial water needs, upstream flood damages, and water needs for fish, wildlife, and forest-based industries. Types of surveys and plans include watershed pans, river basin surveys and studies, flood hazard analyses, and flood plain management assistance. The focus of these plans is to identify solutions that use land treatment and nonstructural measures to solve resource problems.		USDA, Natural Resources Conservation Service Watershed Surveys and Planning http://mimosa.itc.nrcs.usda.gov/scripts/ndisapi.dll/oip_public/USA_map for a USDA service center in your area. WPB: West Palm Beach Service Center 559 N. Military Tr.. West Palm Beach, FL 33415
Watershed Surveys and Planning (Small Watershed Program; PL-566; Watershed Surveys and Planning)	To provide planning assistance to Federal, State, and local agencies for the development of coordinated water and related land resources programs in watersheds and river basins. Special priority is given to the objectives of setting priorities in helping to solve problems of	Any local or State water resource agency or other Federal agency concerned with water and related land resource development, counties, municipalities, town or township, soil and water conservation district, flood prevention or flood control	Deputy Chief For Programs, Natural Resources Conservation Service, Department of Agriculture, P.O. Box 2890, Washington, DC 20013. Phone: (202) 720-4527.

	upstream rural community flooding, water quality improvement coming from agricultural nonpoint sources, wetland preservation and drought management for agriculture and rural communities. Special emphasis is given to assisting communities which desire to adopt floodplain management regulations to meet the requirements of the National Flood Insurance Program and State agencies in developing a strategic water resource plan. Examples of Funded Projects: In New Castle Counties Delaware, the Central Pencader flood plain management study was initiated to guide land use, zoning, and subdivision decisions to develop sound flood plain and storm water management practices.	district, Indian tribe or tribal organization or nonprofit organization.	
Wetlands Protection: Development Grants	To assist States, Tribes, and local governments in developing new or enhancing existing wetlands protection management and restoration programs. The projects that will be funded under this program should support the initial development of a wetlands protection restoration program or support enhancement/refinement of an existing program. Projects must clearly demonstrate a direct link to increasing a State=s tribe=s, or local governments ability to protect manage and/or restore its wetlands resources.	State or tribal agencies; interstate/inter-tribal entities and associations; and local governmental entities are eligible to receive funding.	Peter Kalla, Wetlands Protection Section, EPA, Region IV, Atlanta, GA 30365. Phone: (404) 562-9414.
Wildlife Habitat Incentives Program	The WHIP is a voluntary program for people who want to develop and improve wildlife habitat primarily on private lands. It	All lands are eligible for WHIP, except for: Federal lands; land currently enrolled in Waterbank, Conservation	Contact http://mimosa.itc.nrcs.usda.gov/scripts/ndisapi.dll/oip_public/USA_map for a USDA service center in your area. WPB:

	provides both technical assistance and cost share payment to help establish and improve fish and wildlife habitat.	Reserve Program, Wetlands Reserve Program, or other similar programs; lands where the expected impacts from on-site or off-site conditions make the success of habitat improvement unlikely.	West Palm Beach Service Center 559 N. Military Tr.. West Palm Beach, FL 33415

Appendix G Section 2.0: Management of Mitigation Disaster Assistance Monies

Principal federal and state assistance programs used for mitigation activities include the Hazard Mitigation Grant Program (HMGP), Flood Mitigation Assistance (FMA), and Emergency Management Preparedness and Assistance (EMPA). Public Assistance projects, although they may have a mitigation component, are primarily managed outside the LMS process by the Public Assistance Unit of the Operations Section. The LMS monitors and assists PA projects as appropriate. Pre-Disaster Mitigation (PDM) grants are pursued pre-event. Small Business Administrative loans are coordinated through the Division of Emergency Management, but typically do not involve the LMS. Given the level of activity generated by Hurricanes Frances and Jeanne in 2004, Hurricane Wilma in 2005, and Tropical Storm Fay in 2008 HMGP handled most of the need for near-term mitigation funds. Other funding sources beyond the above (e.g. Community Development Block Grants) have not as yet been fully utilized for structural mitigation, although Economic Development Administration and Public Entity Risk Institute grant funds and private sector donations were used for the establishment of a state-of-the-art community wide Post Disaster Redevelopment Plan and business preparedness initiatives designed to build a more disaster resilient community and economy..

HMGP, FMA, EMPA, and PDM projects are subject to the standard LMS submission and prioritization process. However, hazard-specific HMGP projects, submitted specifically in response to county allocations, are, at the discretion of the LMS Steering Committee and Evaluation Panel may be prioritized using other criteria relevant to flood mitigation and wind retrofit projects. In response to Hurricanes Frances & Jeanne, the LMS's Flood Mitigation Technical Advisory Committee played an important role in prioritizing HMGP flood mitigation projects.

Once projects are submitted to Florida Division of Emergency Management and FEMA, those funding agencies work directly with applicant jurisdictions and organizations. The LMS monitors project status and assists and works with applicants and funding agencies to resolve issues and problems that may arise.

Appendix H: Plan Adoption

Requirement §201.6(c)(5): The local hazard mitigation plan ***shall*** include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan.

Appendix H contains a copy of the FEMA Approval Letter dated November 10, 2009 covering the 2009 Revised Local Mitigation Strategy Plan. It also includes draft copies of the adoption resolution to be approved at the Board of County Commissioners meeting scheduled for January 12, 2010 and a draft copy of the resolution for Municipal adoption.

Original signed copies of the resolutions are maintained on file in the Clerk & Comptroller Office.

All partners must follow the participation requirements described in Section 1 to remain in good standing with the Local Mitigation Strategy. An executed adoption resolution along with compliance with LMS participation rules qualifies partners to submit qualified mitigation projects for federal funding consideration.

U.S. Department of Homeland Security
FEMA Region IV
3003 Chamblee Tucker Road
Atlanta, GA 30341

FEMA

November 10, 2009

Mr. Ruben Almaguer, Division Director
Division of Emergency Management
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

Attention: Mr. Miles Anderson

Reference: Palm Beach County Local Hazard Mitigation Plan Update

Dear Mr. Almaguer:

This is to confirm that we have completed a Federal/State review of the Palm Beach County Local Hazard Mitigation Plan Update for compliance with the federal hazard mitigation planning standards contained in 44 CFR 201/6(b)-(d). We have determined that the Palm Beach County Local Hazard Mitigation Plan Update is compliant with federal standards, subject to formal community adoption, for the jurisdictions listed below:

- City of Atlantis
- City of Belle Glade
- City of Boca Raton
- City of Boynton Beach
- Town of Briny Breezes
- Town of Cloud Lake
- Town of Glen Ridge
- City of Delray Beach
- City of Greenacres
- Town of Gulf Stream
- Town of Haverhill
- Town of Highland Beach
- Town of Hypoluxo
- Town of Juno Beach
- Town of Jupiter
- Town of Jupiter Inlet Colony
- Town of Lake Clark Shores
- Town of Loxahachee Groves
- Town of Lake Worth
- City of Lantana
- Town of Manalapan

- City of Atlantis
- City of Belle Glade
- City of Boca Raton
- Town of Magnolia Park
- Village of North Palm Beach
- Town of Ocean Ridge
- City of Pahokee
- Town of Palm Beach Shores
- Town of Palm Beach
- Town of Palm Beach Gardens
- Village of Palm Springs
- City of Rivera Beach
- Village of Royal Palm Beach
- City of South Bay
- City of South Palm Beach
- Village of Tequesta
- Village of Wellington
- City of West Palm Beach
- Unincorporated Palm Beach County
- Town of Lake Park
- Northern Palm Beach County Improvement District
- Indian Trail Improvement District
- Village of Golf

In order for our office to issue formal approval of the plan, Palm Beach County Local Hazard Mitigation Plan Update must submit adoption documentation and document that the final public meeting occurred. Upon submittal of these items to our office, we will issue formal approval of the Palm Beach County Local Hazard Mitigation Plan Update.

For further information, please do not hesitate to contact Gabriela Vigo, of the Hazard Mitigation Assistance Branch, at (229) 225-4546 or Linda L. Byers, of my staff, at (770) 220-5498.

Sincerely,

Robert E. Lowe, Chief
Risk Analysis Branch
Mitigation Division

RESOLUTION NO. _____

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS OF PALM BEACH COUNTY, FLORIDA ADOPTING THE 2009 REVISED UNIFIED PALM BEACH COUNTY LOCAL MITIGATION PLAN; PROVIDING AN EFFECTIVE DATE; AND FOR OTHER PURPOSES.

WHEREAS, Palm Beach County is susceptible to a variety of natural and man-made disasters; and

WHEREAS, the Disaster Mitigation Act of 2000, was enacted to establish a national disaster hazard mitigation program to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from disasters, and to assist state, local and Indian tribal governments in implementing effective hazard mitigation measures to ensure the continuation of critical services and facilities after a natural disaster; and

WHEREAS, the Disaster mitigation Act of 2000, as a condition for qualifying for and receiving future Federal mitigation assistance funding, requires such governments to have Federal Emergency Management Agency approved hazard mitigation plans in place that identify the natural hazards that could impact their jurisdictions, identify actions and activities to mitigate the effects of those hazards, and establish a coordinated process to implement plans; and

WHEREAS, Palm Beach County's Local Mitigation Strategy, in coordination with governmental and non-governmental stakeholders having an interest in reducing the impact of natural disasters, and with input from the private sector and other members of the public, developed and revised the Palm Beach County Unified Local Mitigation Strategy; and

WHEREAS, the 2009 revised Local Mitigation Plan has been approved by the Florida Division of Emergency Management and the Federal Emergency Management Agency subject to adoption by the County Board of County Commissioners; and

WHEREAS, the LMS Steering Committee recommends the formal adoption of the 2009 and planned future enhancements described therein;

NOW, THERFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF PALM BEACH COUNTY, FLORIDA, THAT:

Section 1. The County hereby approves and adopts the Revised Unified Local Mitigation Strategy Plan in its entirety, as revised and approved by the Local Mitigation Steering Committee and the Federal Emergency Management Agency.

Section 2. The County authorizes the appropriate County Officials to pursue available funding opportunities for implementation of proposed mitigation initiatives described therein, and upon receipt of such funding or other necessary resources, seek to implement the actions contained in the mitigation strategies set out by the plan.

Section 3. The Board of County Commissioners directs that executed originals of this resolution and the adoption resolutions of all participating municipalities be held on file in the Office of the Clerk of the Circuit Court.
The foregoing Resolution was offered by Commissioner _____ who moved its adoption. The motion was seconded by Commissioner _____ and upon being put to a vote, the vote was a follows:

BURT AARONSON, CHAIR	_____
KAREN T. MARCUS, VICE CHAIR	_____
JEFF KOONS	_____
SHELLEY VANA	_____
STEVEN L. ABRAMS	_____
JESS R. SANTAMARIA	_____
PRISCILLA A. TAYLOR	_____

The Chair thereupon declared the Resolution duly passed and adopted_____, 2009.

APPROVED AS TO FORM AND LEGAL SUFFICIENCY

PALM BEACH COUNTY, FLORIDA BY ITS BOARD OF COUNTY COMMISSIONERS

By: _____
County Attorney

By: _____
Deputy Clerk

APPROVED AS TO CONTENT
By: _____
Vince Bonvento, Assistant County Administrator
Director, Public Safety Department

RESOLUTION NO. _____

A RESOLUTION ADOPTED BY THE (Municipal Governing Body) OF (Municipality), FLORIDA, AUTHORIZING THE (Municipality) TO APPROVE AND ADOPT THE 2009 REVISED PALM BEACH COUNTY UNIFIED LOCAL MITIGATION STRATEGY PLAN; PROVIDING AN EFFECTIVE DATE AND FOR OTHER PURPOSES.

WHEREAS, Palm Beach County is susceptible to a variety of natural and man-made disasters; and

WHEREAS, the Disaster Mitigation Act of 2000, was enacted to establish a national disaster hazard mitigation program to reduce the loss of life and property, human suffering, economic disruption, and disaster assistance costs resulting from disasters, and to assist state, local and Indian tribal governments in implementing effective hazard mitigation measures to ensure the continuation of critical services and facilities after a natural disaster; and

WHEREAS, the Disaster mitigation Act of 2000, as a condition for qualifying for and receiving future Federal mitigation assistance funding, requires such governments to have Federal Emergency Management Agency approved hazard mitigation plans in place that identify the natural hazards that could impact their jurisdictions, identify actions and activities to mitigate the effects of those hazards, and establish a coordinated process to implement plans; and

WHEREAS, Palm Beach County's Local Mitigation Strategy, in coordination with governmental and non-governmental stakeholders having an interest in reducing the impact of natural disasters, and with input from the private sector and other members of the public, developed and revised the Palm Beach County Unified Local Mitigation Strategy; and

WHEREAS, the 2009 revised Unified Local Mitigation Plan has been approved by the Florida Division of Emergency Management and the Federal Emergency Management Agency subject to adoption by the County Board of County Commissioners; and

WHEREAS, the LMS Steering Committee recommends the formal adoption of the 2009 Revised Unified LMS Plan, including planned future enhancements described therein, by the County and all 38 participating municipalities.

NOW, THERFORE, BE IT RESOLVED BY THE (MUNICIPAL GOVERNING BODY) OF THE (MUNICIPALITY), **FLORIDA, THAT:**

Section 1. The (Municipality) hereby approves and adopts the 2009 Revised Unified Local Mitigation Strategy Plan (attached hereto as Exhibit A) in its entirety, as revised by the LMS and approved by the Palm Beach County Board of County Commissioners, the Florida Division of Emergency Management and the Federal Emergency Management Agency.

Section 2. The (Municipality) authorizes the appropriate (Municipality) Officials to pursue available funding opportunities for implementation of proposed mitigation initiatives described in the Plan, and upon receipt of such funding or other necessary resources, seek to implement the actions in accordance with the mitigation strategies set out by the plan.

Section 3. The (Municipality) will continue to support and participate in the LMS planning and implementation process as required by FEMA, the Florida Division of Emergency Management, and the Palm Beach County LMS Steering Committee.

Section 4. The (Municipal Governing Body) directs the (Municipality) Clerk to transmit an original of the executed Resolution to the Palm Beach County Division of Emergency Management, attention LMS Coordinator (712-6481), for filing in the Office of the Clerk and Comptroller.

RESOLVED AND ADOPTED this _____day of _____, 2010.

Appendix I: Meeting Summaries

Meeting summaries are no longer posted in the LMS Plan. They are available upon request.

Appendix I will be re-designed in future editions.

Appendix J: Repetitive Loss Properties

In accordance with the following FEMA requirement, the Palm Beach County LMS includes repetitive flood loss properties in its risk assessments:

Requirement §201.6(c)(2)(ii): The risk assessment **must** also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods.

In addition, Palm Beach County's LMS and Community Rating System programs monitor the number and locations of flood prone properties countywide. At this writing, there were an estimated 285 FEMA-registered repetitive flood loss properties in the combined jurisdictions of incorporated and unincorporated Palm Beach County.

Repetitive Loss Properties

Repetitive loss properties are defined by the National Flood Insurance Program as: "properties with two or more NFIP claims of at least $1,000 in any rolling ten year period." Repetitive-loss properties constitute a significant drain on the resources of the NFIP, costing about 200,000,000 annually. Repetitive-loss properties comprise approximately 1 percent of currently insured properties but account for 25 to 30 percent of claims losses. They represent a key target of the NFIP for mitigation, including relocation, elevation and buyouts.

As of June 2009 the NFIP lists 285 repetitive flood loss properties in Palm Beach County. They are widely scattered throughout the eastern corridor of the county (see the map below). Because of the scale of the map, properties appear to be more closely located than they are. While there are a few geographical clusters of repetitive loss properties, most involve isolated parcels. Many owners complain that their flood problems are more a matter of raised road crowns, construction of impervious surfaces like parking lots and roads, and new surrounding development built at higher elevations, than low base flood elevations per se.

The accuracy of the repetitive loss list is somewhat suspect. On the one hand it has been found to contain properties erroneously listed as residing in Palm Beach County. At the same, it is believed that some property owners who have insurance, may not make claims for fear of increased insurance rates or punitive actions. There is a concern that some residents may be living in unhealthy, previously flooded, mold infested homes.

Severe Repetitive Loss Properties

The NFIP identifies higher risk properties as "severe repetitive loss" properties, because of the frequency and cost of flood insurance claims.

A severely repetitive loss property is defined by the NFIP as a residential property that is covered under an NFIP flood insurance policy and:

(a) has at least four NFIP claim payments (including building and contents) over $5,000 each, and the cumulative amount of such claims payments exceeds $20,000; or

(b) for which at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.

For both (a) and (b) above, at least two of the referenced claims must have occurred within any ten-year period, and must be greater than 10 days apart.

As of June 2009 there are five Palm Beach County properties listed as severe repetitive loss properties; three in the northern part of the Town of Palm Beach; one in the southern part of the Town of Palm Beach, and one in the City of West Palm Beach

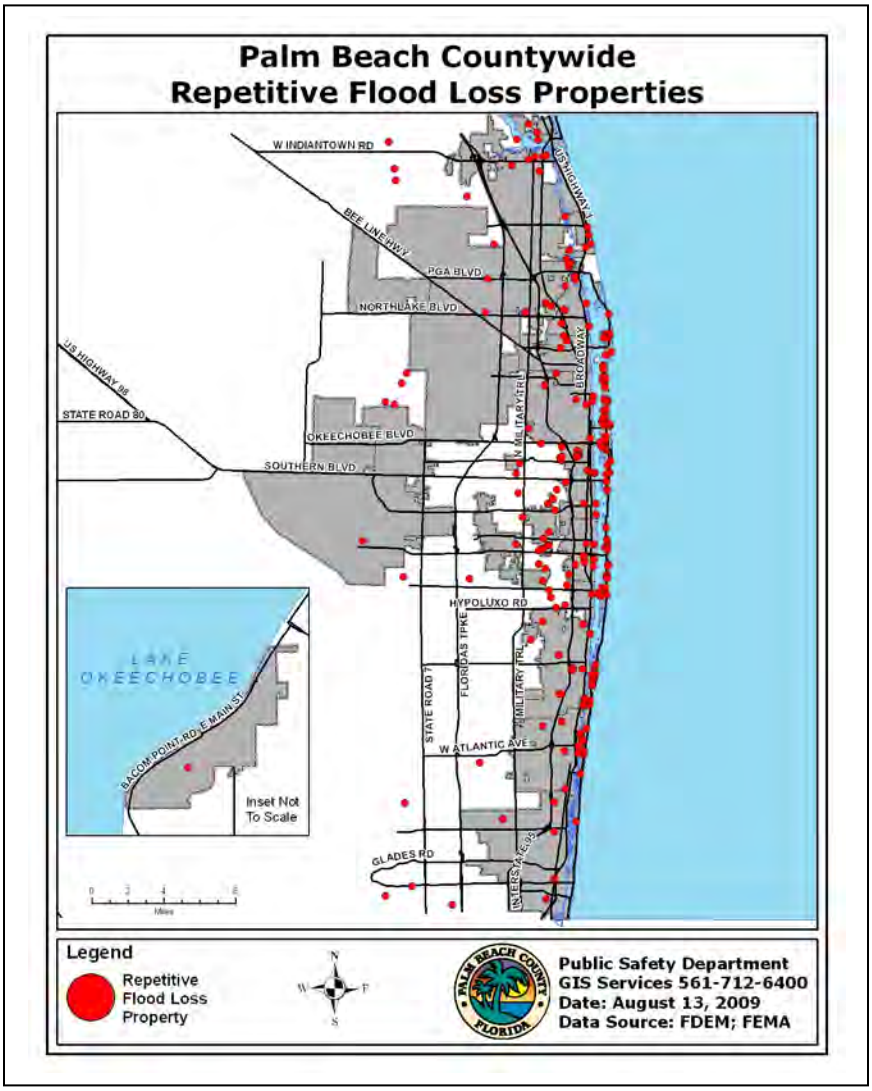
The table below lists the number of repetitive loss properties by jurisdiction.

Palm Beach County
Repetitive Loss Properties & Severe Repetitive Loss Properties (2009)

Atlantis	1	
Boca Raton	4	
Boynton Beach	12	
Cloud Lake	1	
Delray Beach	16	
Gulf Stream	2	
Haverhill	1	
Highland Beach	1	
Juno Beach	4	
Jupiter	7	
Lake Park	3	
Lake Worth	9	
Lantana	6	
Manalapan	3	
Mangonia Park	2	
North Palm Beach	2	
Ocean Ridge	15	
Pahokee	1	
Palm Beach County	70	
Palm Beach Gardens	5	
Palm Beach Shores	2	
Palm Beach	77	4
Palm Springs	1	
Riviera Beach	10	
South Palm Beach	1	
Tequesta	2	
West Palm Beach	27	1
Countywide Total	285	5

Countywide, repetitive flood loss properties fall into the following categories by use: Single family (68.4%), 2-4 family residences (7.0%), other residential (10.2%), condominiums (2.5%), and non-residential (11.9%).

The map below shows repetitive flood loss properties relative to Special Flood Hazard Areas. At least 12 percent of repetitive flood loss properties reside outside the boundaries of Special Flood Hazard Areas. Although the exact number is not known, it is suspected that in excess of 25 percent of flood claims come from areas outside the Special Flood Hazard Area.



A major mitigation goal of the LMS and CRS programs is the reduction in the number of repetitive loss properties county-wide through a combination of local and grant assisted projects and initiatives. These efforts draw heavily from established funding programs such as the Flood Mitigation Assistance (FMA), Pre Disaster Mitigation (PDM), and Hazard Mitigation Grant Program (HMGP) programs.

Additional information on repetitive loss properties is contained in Section 4.1.4 of the plan, in the flood hazard section, in the built environment section of the Palm Beach County Hazard Environment profile (Special Appendix II p.SAII-36) and in Special Appendix III.

A list of repetitive loss properties with detailed loss, property description and owner information is maintained by the LMS Working Group and the Community Rating System committee and kept on file at the county Emergency Operations Center. For privacy reasons, this information is not included in publicly distributed copies of the LMS plan. The repetitive loss property list is updated periodically as properties are mitigated or otherwise removed from the list, and/or new structures are designated as repetitive loss properties by FEMA.

Although a significant portion of the county falls within FEMA designated Special Flood Hazard Areas, flooding can and does occur anywhere in the county. Because of elevated slabs and effective drainage systems, structural flooding is not widespread. Nevertheless, the county has 285 structures listed by FEMA as repetitive flood loss properties. The Town of Palm Beach County and the unincorporated area of the county have by far the highest incidence of repetitively flooded properties, 77 and 70 respectively (52.7% of the county total). West Palm Beach, Delray Beach, Ocean Ridge and Boynton Beach have significant numbers as well. Surprisingly, Jupiter and Boca Raton which the Flood Insurance Rate Maps, show has having significant special flood hazard areas only have 7 and 4 repetitive flood loss properties respectively.

Number of Addresses in Special Flood Hazard Areas

A total of 109,151 addresses in 24 municipalities and unincorporated Palm Beach County are located with Special Flood Hazard Areas (A Zones). These addresses are widely scattered throughout the County. The chart on the next page shows a breakdown by jurisdiction.

Jurisdiction	No. Addresses
Atlantis	222
Boca Raton	9,181
Boynton Beach	11,872
Cloud Lake	14
Delray Beach	9,567
Gulf Stream	217
Haverhill	503
Highland Beach	2,417
Juno Beach	222
Jupiter	7,056
Lake Park	931
Lake Worth	1,392
Lantana	1,416
Manalapan	248
Mangonia Park	35
North Palm Beach	3,173
Ocean Ridge	1,231
Palm Beach	4,766

Palm Beach Gardens	1,400
Palm Springs	2,690
Riviera Beach	3,960
South Palm Beach	1,225
Tequesta	432
West Palm Beach	11,997
Unincorporated PBC	48,760
Countywide Total	**157,669**

Palm Beach County
Number of Addresses in Special Flood Hazard Areas

Source: FEMA Digitized FIRMS 1996

Appendix K: Plan Maintenance

This appendix describes the LMS's approach to plan maintenance in fulfillment of the following FEMA requirements:

Requirement §201.6(c)(4)(i): The plan maintenance process *shall* include a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

Requirement §201.6(c)(4)(iii): The plan maintenance process *shall* include a discussion on how the community will continue public participation in the plan maintenance process.

Monitoring

The LMS Coordinator will monitor the progress of mitigation projects and actions based on inputs from county and municipal project managers and periodic requests directed to the Mitigation Bureau at the Florida Division of Emergency Management.

All LMS member agencies and jurisdictions will be surveyed periodically (at least once per year) via e-mail for information relating to hazard occurrences, new mitigation initiatives, changes in resources and assets, etc. All jurisdictions will be asked to update all mentions of their involvement with mitigation and the LMS in the current Plan.

The Mitigation Planning staff of the Palm Beach County Division of Emergency Management will monitor and document hazard events, note changes in the hazard environment, capture damage and loss data, and maintain and update hazard and vulnerability assessment data on an ongoing basis.

The LMS Coordinator will organize meetings of the Steering Committee and subcommittees to address issues of interest, provide LMS members with meeting summaries and action items, and retain meeting results in LMS files.

The LMS Coordinator and Steering Committee will monitor grant opportunities and advise LMS member organizations of deadlines and application requirements. Working with the Division of Emergency Management's Grant Analyst, the LMS Coordinator will track and report the financial status of active grant projects.

The LMS Coordinator will work with the Recovery unit of the Division of Emergency Management in assessing post disaster damages, compile information for declarations, and monitor announcements of Hazard Mitigation Grant Program and other funding assistance organizations and programs. The Coordinator will provide information and otherwise assist potential grant applicants.

The above activities outline plan maintenance during the four years leading up to the fifth year of the planning cycle (2009–2012). Beginning in January of each formal revision year, the Steering Committee will lead a more intensive planning effort to update the Plan, obtain approvals, make necessary revisions and complete the 44CFR crosswalk for FEMA review and approval.

Evaluation

The LMS Plan and program will be evaluated annually to determine the effectiveness of its projects, programs, and policies. The LMS Coordinator will be responsible for scheduling and organizing Steering and subcommittee meetings, collecting, analyzing and incorporating member, State, FEMA and public inputs, and preparing or coordinating preparation of plan revisions. Each year, the LMS Coordinator and Steering Committee members will assess the current version of the Plan and determine the enhancements needed or desired.

A thorough examination of all sections of the Plan will take place during the fifth year of the process to ensure Palm Beach County has a current and actionable document at the end of the planning cycle. The Steering Committee and LMS Coordinator will review goals and action items to determine their relevance to changing situations in the County and to changes in state or federal policy. The Steering Committee will look at any changes in resources that may influence plan implementation (such as funding) and program changes that may require changes. The Steering Committee will review the Plan to determine:

- Are the mitigation actions effective?
- Are there any changes in land development that affect mitigation priorities?
- Do the goals, objectives, and action items meet social, technical, administrative, political, legal, economic, and environmental expectations?
- Are the goals, objectives, and mitigation actions relevant and achievable given any changes in State or federal regulations or policy?
- Is there any new research or data that affects the Risk Assessment portion of the Plan?

For the 2009 revised plan, all members were asked via e-mail to review the 2004 Unified Local Mitigation Strategy Plan posted on-line. Separate hard copies of municipal-specific sections were extracted, highlighted and mailed to municipalities for review and update. Follow-ups were made to ensure revised inputs were received from as many jurisdictions as possible. Revisions were coordinated by two members of the mitigation planning staff. All revisions were reviewed by the LMS Chair and select members of the Steering Committee. The revised plan was finally posted on the county's Division of Emergency Management homepage for final review and comments prior to submitting the draft plan to state and FEMA for approval.

Update

As practicable, the LMS Coordinator will compile new information and incorporate it into the Plan to minimize workloads during the final months of the five year planning cycle. The Coordinator and Steering Committee will also assess and incorporate recommendations offered by FEMA and the State.

Prior to the fifth year of the planning cycle, the County LMS will apply for contractor grants to assist the Plan revision process. If grant funding is not forthcoming, the scope and timing of updates and revisions will be scaled to available internal resources.

The updated/revised Plan will be submitted to the Mitigation Bureau of the Florida Division of Emergency Management in accordance with State and FEMA deadlines and requirements.

After FEMA has approved the County Plan, the LMS Coordinator will submit it to the Board of County Commissioners for formal adoption. The approval process may require as much as three months to schedule and complete. Once the Plan is formally adopted by the County, each

of the 38 municipalities will follow suit. Historically, the municipal adoption process has taken 4 to 6 months to accomplish.

Originals of the executed adoption resolutions will be filed with the Minutes Department of the Clerk of the Circuit Court. As directed by FEMA copies will be submitted to the State and FEMA and/or posted in the Plan. A copy of the County Adoption resolution will be included in the Final Plan. Any delinquent adoptions will be noted in the Plan as well.

Continued Public Involvement

Palm Beach County is dedicated to public involvement in the hazard mitigation planning and review process. During all phases of plan maintenance, the public will be provided an opportunity to provide opinions, concerns, suggestions and ideas to the LMS. Historically, however, attempts at organizing special forums for the general public have produced poor attendance and weak participation. Private sector participation has been somewhat more successful.

For future updates and revisions, the LMS will post drafts of the Plan on the Division of Emergency Management's website for public comment. To improve the chances for significant public input, all jurisdictions will be asked to solicit neighborhood associations and other resident groups like CERT teams in their area to visit the website. Public inputs will be presented to the Steering Committee for discussion and consideration. If warranted these inputs will be incorporated into the Plan.

Palm Beach County participates in an ongoing public-private partnership organized for building a more disaster resilient community and economy. The partnership is comprised of a growing network of business partners, universities, not-for-profit organizations and governmental agencies at the local, regional, state and national level. The Executive Committee of the partnership has identified 31 collaborative initiatives it will seek to implement in the coming years. Many of these initiatives relate to private sector-driven pre and post disaster mitigation programs, systems and policies. Several LMS committee members are involved in these partnership initiatives.

The county, municipalities, and LMS committees are actively involved in year round outreach and awareness efforts such as public presentations, distribution of locally prepared and FEMA pamphlets and booklets, expos, etc. These activities frequently involve the use of volunteer community groups such as CERT, Citizen Corps, AmeriCorps, the Disaster recovery Coalition.

The LMS also works closely with professional organizations such as the Risk & Insurance Managers Society, Chambers of Commerce, Merchant Associations, Association of Contingency Planners, ASIS, Association of Roofers & Sheet Metal Workers, builders associations, building owners and manager associations, etc. and participates in special forums organized by corporate foundations and the Business Civic Leadership Center of the U.S. Chamber of Commerce.

Appendix L: Project Scoring Examples

Requirement: §201.6(c)(3)(iii): The mitigation strategy section **shall** include an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

This appendix supports the above FEMA requirement by providing a few examples of Palm Beach County's current project scoring process using the criteria established at the program's inception. This process is used as the basis for ranking (prioritizing) proposed projects. In order for a mitigation project to be eligible for federal monies there must be a Benefit Cost Analysis completed with results of a ratio greater than 1. This appendix illustrates the current scoring process through four examples:

EXAMPLE 1: Community A - Library Wind Retrofit;

EXAMPLE 2: Community B - RV Park Flooding Prevention;

EXAMPLE 3: Community C - Hardening of an EOC; and

EXAMPLE 4: Community D - Initiation of a Burning Program to Prevent Wildfire Losses in the Urban Interface Zone.

EXAMPLE 1: COMMUNITY A - LIBRARY RETROFIT

Community A is a well-to-do community centered along the beach and on the Intracoastal Water. They have recently completed a large and very nice public library located on the Intracoastal Waterway. The library has many windows and a picturesque view of the waterway. The building itself is engineered to withstand category 5 hurricane force winds, but it is located in an area that can expect a 5 foot above mean high tide storm surge during storms rated at category 3 or higher. A storm surge of this magnitude will flood the bottom floor of this library to a depth of 2 feet. Equipment and books threatened by such an event are valued at an estimated $200,000. It will cost approximately $60,000 to raise the books and equipment in this library 3 ft above their current level. This would eliminate the $60,000 of exposure in all but the most catastrophic hurricanes of category 5 strength, achieving and an estimated 80% reduction in potential losses.

Applying the Benefit/Cost formula:

($ 200,000 - $40,000)) $ 60,000 = 2.67 Benefit/Cost Ratio therefore, this is a viable project.

Applying the Scoring Criteria (See Attached Score Sheet) this project would be scored as follows:

COMMUNITY BENEFIT

This is a Flood Damage Reduction activity and is awarded 10 points here;

Libraries are considered secondary critical facilities and 6 points are awarded here;

In terms of Community Exposure $200,000 is considered moderate and the frequency of the hazard this project mitigates for, Category 3 or higher storm surge, is low. Therefore Moderate (M) Exposure (E) + Low (L) Frequency (F) = 4 points under category; and

Cost Effectiveness in terms of the Benefit/Cost Ration is 2.67, therefore 12 points are awarded here.

This project's score under Community Benefit is 32.

COMMUNITY COMMITMENT

This project is not contained within a specific policy of Community A's Comprehensive Growth Management Plan, but this type of mitigation is addressed as a broad goal in the Coastal Management Element of that plan. Five points are awarded under this category;

Although libraries are considered secondary critical facilities this project is not part of any emergency management plan. It is, however, part of the Library Department's long-term strategic plan, which has been officially adopted by the City Council. Ten points are awarded here;

While there is considerable public support for the library in general, and there is every reason to believe there would be widespread public support for this mitigation project if it was presented to the public, this has not yet been done. Most of the citizens of Community A are not aware of the potential problem this mitigation project addresses. No points can be awarded here at this time. (Community A could change this score by holding public workshops on the problem and soliciting voter response questionnaires or other methods.)

This projects score under Community Commitment is 15 points.

PROJECT IMPLEMENTATION

There are no regulatory problems with this project and 5 points are awarded here;

Although the exposure is clearly visible, there has not been a severe hurricane since this library was constructed and therefore there is no history of loss or repetitive loss for this structure. Flood hazard mitigation money available now is directed toward structures suffering repetitive losses, and consequently no funds are immediately available. FEMA and other funding sources are being reviewed and it is believed that funds for this type of mitigation project will be available within the next 1 to 2 years. This project is awarded 6 points in this category;

Community A is an affluent community and despite the fact that the public is currently unaware of this problem, the City Council feels confident enough of public support to

commit a 50% match, or $30,000 toward this mitigation effort. The project is awarded 5 points here; and

If funding was to become available, this project could accomplish its objective of raising library books and equipment above the category 3 storm surge level in less than one year. The project is awarded 5 points here.

This project's score under Project Implementation is 21 points.

The Final Score for this proposed mitigation project is 68 points.

EXAMPLE 2: COMMUNITY B - RV PARK FLOODING PREVENTION

Community B has a large RV park with very poor drainage. Every time there is a minimal rain event this area floods, causing significant danger and health hazards to the residents in terms of flooded power outlets and sewage-contaminated standing water. These events also cause the town and county considerable expense and inconvenience such as traffic problems, emergency services disruption, and clean-up. This type of flooding happens approximately eight times per year with an estimated expense to the town and county of $3,000 per event. Correcting this problem will require a substantial reworking of the local drainage system. The estimated cost for this mitigation effort is $400,000.

If the flooding this project is designed to correct occurs eight times a year at a cost of $3,000 per event to the town and county in terms of police, fire/rescue, and utility worker time involvement, then Community B has a documented exposure of $24,000 per year to this hazard. If we assume the life expectancy of a drainage project to be 30 years, the potential savings to the town and county could be as high as $720,000. A reduction in the frequency of these flooding events by 90% would make the Benefit/Cost ratio on this project:

($720,000 - $72,000)) $400,000 = 1.62 Benefit/Cost Ratio therefore, this is a viable project.

Applying the Scoring Criteria (See Attached Score Sheet) this project would be scored as follows:

COMMUNITY BENEFIT

This project is a Flood Damage reduction project and is awarded 10 points under the CRS Credit criterion.

This project addresses a problem within an RV park where there are no permanent residents. It does not address critical elements of the community infrastructure and must be considered as addressing only public convenience considerations. Award 4 points here.

Based on individual flooding events the community's exposure is low, but when considered over time this exposure becomes much higher. Points are awarded under

this criterion based on a Medium Exposure and a High Frequency of occurrence. Nine points are awarded under this criterion.

The cost effectiveness based on the Benefit/Cost ratio for this project is 1.62; therefore 8 points are awarded here.

Total project score under Community Benefit is 31 points.

COMMUNITY COMMITMENT

This proposed project is contained within a broad mitigation AGoal@ under the Coastal Element of Community B's CGMP, but Community B has developed a proposed specific Policy amendment directed toward this type of drainage system retrofit. The project is awarded 8 points here.

This project is also contained within the Flood Plain Management Plan for Community B, which has been officially adopted. Award 10 points in this category.

This problem has been the subject of numerous letters and editorials in the local paper. It has also been the subject of one advertised public meeting. Award 5 points here.

Total project score under Community Commitment = 23 points

PROJECT IMPLEMENTATION

This project requires a considerable amount of construction work. While it is consistent within the local regulatory frame work there are regional and possibly national issues that will have to be addressed. Since the project will be discharging storm water runoff into some body of water there will be water quality issues that must be dealt with. If Federal money is used, an NPDES review will be required. While all these issues can be addressed, they will delay implementation of the project and increase its cost. Award only 1 point under this criterion.

At the moment there are no identified sources for funding for this project. Once the LMS is adopted it is believed the Federal Government will make available, through the State DEM some funds to implement priority mitigation projects. These funds may be available within 1 to 2 years. Award 6 points under this criterion.

While Community B is relatively affluent they are not in a position to match more than 10% or $40,000 on a project of this magnitude. Award 1 point under this criterion.

If funding were immediately available for this project it would take approximately three years before this project could be permitted, bid, constructed, and operational. Award 3 points under this criterion.

Total project points under Project Implementation = 11

The Final Score for this proposed mitigation project is 65 points.

EXAMPLE 3: COMMUNITY C - DEVELOP A HARDENED EOC

Community C has no hardened Emergency Operations Center (EOC). They presently base their emergency management personnel in city office buildings that are highly vulnerable to both flooding and wind damage. They have an estimated $300,000 worth of computer, communications, and emergency response equipment housed within these vulnerable facilities. The County provides Community C with its Fire/Rescue services and is presently building a new, hardened fire station to serve this section of the County. County Fire/Rescue Services have offered to provide Community C space within their new building, but Community C will have to have this space fitted for Emergency Management Operations. Fitting this space and moving Community C's existing equipment into it will cost Community C an estimated $60,000. By undertaking this move Community C should reduce the exposure to its physical assets by 95% as well as position its Emergency Management Personnel in a much safer environment.

Applying the Benefit/Cost formula shows:

> ($ 300,000 - $15,000)) $ 60,000 = 4.75 Benefit/Cost Ratio therefore, this is a viable project.

Applying the Scoring Criteria (See Attached Score Sheet) to this project would be scored as follows:

COMMUNITY BENEFIT

Although not its specific aim, this project may be classified as a Flood Damage Reduction activity. Award 10 points under this criterion.

This project addresses hardening of a Primary Critical Facility. Award 10 points here.

The currently utilized location of emergency management operations is highly vulnerable to sever tropical storms, hurricanes, or tornadoes and all these types of storms occur with medium frequency. Thus, we have a High Exposure = Medium Frequency = 8 points for this criterion.

The cost effectiveness for this proposed project expressed as the Benefit/Cost Ration is 4.75, thus 20 points are awarded in this criterion.

Total Community Benefit Points = 48

COMMUNITY COMMITMENT

The concept of developing a hardened EOC for Community C is expressed in both a Goal and a specific Policy of their CGMP. Award 10 points under this criterion.

Development of a permanent, protected EOC is also contained with Community C's Emergency Management Plan. Award 10 points under this criterion.

There is no real public support for, or opposition to, this project. Although it is believed the public would be highly supportive of this project if it were presented to them, they are at this time unaware of the problem. No points can be awarded in this criterion.

Total Community Commitment points = 20

PROJECT IMPLEMENTATION

There are no regulatory problems with this proposed project. Award 5 points here.

There is an identified funding source through the State Department of Emergency Management for the project at this time. Award 10 points here.

Community C will match with funds and in-kind services 20% of the cost of this project. Award 2 points for this criterion.

This project can be accomplished as soon as the new fire station is ready for occupancy in approximately six months. Award 5 points here.

Total Project Implementation Points = 22 points

The Final Score for this proposed mitigation project is 90 points.

EXAMPLE 4: COMMUNITY D - INITIATION OF A CONTROLLED BURNING PROGRAM TO PREVENT WILDFIRE LOSSES IN THE URBAN INTERFACE ZONE.

Community D has a large agricultural, ranching, and undeveloped land component within its jurisdiction. The community wishes to undertake a controlled burning program along the urban interface zone, but to do this it will have to upgrade its fire control equipment, pass a new Acontrolled burning ordinance@, and get the required permission from the forestry and environmental services. The cost of initiating this new program is estimated to be $200,000 including the necessary upgrading of fire control equipment. Community C has an exposure, based on tax role data, of $3 million within the area where wildfire is considered a threat. Controlled burning would reduce the potential risk of wildfire by 60%.

Applying the Benefit/Cost formula shows:

($ 3,000,000 - $ 1,200,000)) $ 200,000 = 9.0 Benefit/Cost Ratio therefore, this is a viable project.

Applying the Scoring Criteria (See Attached Score Sheet) to this project would be scored as follows:

COMMUNITY BENEFIT

This is not a flood-related project so no points are awarded here.

There are primary critical facilities located in the area threatened by wildfire so this project does mitigate for threats to critical elements of the community's infrastructure. Award 10 points here.

The community has a high exposure to wildfire ($3 million) and wildfires have occurred with moderate frequency recently in south Florida. Award eight points for this criterion.

The project has a Benefit/Cost Ratio of 9.0. Award 20 points under this criterion.

Total Community Benefit Points = 38 points

COMMUNITY COMMITMENT

Controlled burning is currently expressed as a broad Goal under Community D's CGMP, but it is the subject of a specific Policy amendment which has been proposed. Award eight points here.

Controlled burning is not addressed in any existing emergency management plans, but following last summer's wildfire outbreaks, controlled burning plans have been developed and proposed. Award 6 points under this criterion.

The danger of wildfire and the desirability of a controlled burn program have been the subjects of two publicly advertised meetings and a considerable number of letters and written comments from the public at-large. Award 5 points for this criterion.

Total Community Commitment points = 19

PROJECT IMPLEMENTATION

The proposed Acontrolled burn ordinance will have to be adopted by the City Council. Various permits will have to be obtained from the County and Division of Forestry when controlled burning is actually to take place, but these are not considered regulatory obstacles to the program itself. The only area of non-regulatory compliance is an issue in passing the ordinance creating the program itself. Award 4 points for this criterion.

The County and the City have agreed to put up the funding for this program so funds will be available as soon as the program has been legally adopted by Community D. Award 10 points here.

Community D will match 50% of the funds required for this program. Award 5 points here.

Once the program is in place it will begin to accomplish its stated goals immediately. Award 5 points here.

Total Project Implementation Points = 24 points

The Final Score for this proposed mitigation project is 81 points.

Appendix M: LMS Committee Members

This Appendix lists the current members of the LMS Working Group, LMS Steering Committee, LMS Subcommittees, and the Executive Committees of support organizations such as the CRS Users Group and Private-Public Partnership for a Disaster resistant Community in partial fulfillment of the following FEMA requirements:

Requirement §201.6(a)(3): Multi-jurisdictional plans (e.g., watershed plans) may be accepted, as appropriate, as long as each jurisdiction has participated in the process … Statewide plans will not be accepted as multi-jurisdictional plans.

Requirement §201.6(c)(2)(ii): [The risk assessment] **must** also address National Flood Insurance Program (NFIP) insured structures that have been repetitively damaged floods

Requirement: §201.6(c)(3)(ii): [The mitigation strategy] must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

Requirement §201.6(c)(4)(ii): [The plan **shall** include a] process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.

Requirement §201.6(c)(4)(iii): [The plan maintenance process **shall** include a] discussion on how the community will continue public participation in the plan maintenance process.

Note: Since the 2004 LMS plan, a 38th municipality, Loxahatchee Groves) was incorporated November 1, 2009 and joined the LMS. Two Special Taxing Districts are also listed as LMS Working Group members.

PALM BEACH COUNTY UNIFIED LMS STEERING COMMITTEE

(Effective June 2008)

PRIMARY	ALTERNATE
Municipal Representatives (7)	
Debbie Manzo – Greenacres	Cindy Lindskoog – Palm Beach Shores
Paul Dorling – Delray Beach	Scott Pape – Delray Beach
David Rotar – Jupiter	
John Bonde – Wellington	
Paul Bloxson – Lake Worth	
Sarah Hannah – Palm Beach	
Ralph Wall – West Palm Beach	
Private Sector (2)	
Link Walther – Continental Shelf	Allison Boyd/Hank Erikson – CSA
Tom Serio – Office Depot	Kathie Kearney – NCCI Holding
University (1)	
Nancy Young – SMBC-FAU	Sharleen Sookoo – EM Manager – FAU
Healthcare (1)	
Al Grasso – PBC Health District	Lisa Rosenfield – PBC Health District
NGO (1)	
Jennifer Beckman – Disaster Recovery Coalition	
State/Federal Government (1)	
Al Howe – Area 7 Regional Coordinator, Florida DEM	
County/Local Government (2)	
Ken Todd – Palm Beach County	
Ken Roundtree – Northern Palm Beach County Improvement District.	

LMS Working Group Municipal Members (Two Special Taxing Districts)			
Municipality	**Primary Member**	**Alternate Member**	**Alternate Member**
Atlantis	Mo Thornton	Liz Caird	Robin Ackerman
Belle Glade	William F Underwood, II	Mark Kutney	Larry Peters
Boca Raton	Leslie Harmon (561) 393-7857 Grants Administrator	Mike Barker Assistant Chief 982-4028	Ruby Childers Manager of Admin Serv. 393-7940
Boynton Beach	Jim Ness Deputy Chief 436-2284	Chuck Magazine Risk Manager	Major Frank Briganti Police Department 742-6130
Briny Breezes	Rita Taylor	Jerome Skrandel	Lee Leffingwell
Cloud Lake	Dorothy Gravelin	Joy McIntosh	W. Patrick Slatery
Delray Beach	David Harden	Paul Dorling	Scott Pape (Acting LMS Chair)
Glen Ridge	Christa J. Simmons	Mary Alice McLane	Michael Jawdy
Golf	Mark Hull	Peter Lamendola	N/A
Greenacres	Deborah Manzo	Michael Grimm	
Gulf Stream	William Thrasher	Linda Harvel	
Haverhill	Joseph Kroll	Janice Rutan	Roche

Highland Beach	Sue Gray	Stan Novak	Robert Dawson
Hypoluxo	Barbara Searls Ross	Mark Hull Cell	Kenneth Schultz
Juno Beach	Andrea Jost	Bob Daniels	
Jupiter	David Rotar	David Kemp	Celeste Hanna
Jupiter Inlet Colony	Joann Manganiello	John Zuccarelli	
Lake Clarke Shores	Joann Hatton	Wes Smith	Mary Pinkerman
Lake Park	Joseph Kroll	Horrace Towns	Kim Alexander
Lake Worth	Paul Blockson	Robert Baldwin	
Lantana	Carl Perdue	David Thatcher	
Loxahatchee Groves *(Incorporated 11/1/06)*	Frank Schiola		
Manalapan	Gregory Dunham	Linda Stumps	Katherine Sims
Mangonia Park	Lee Leffingwell (F)	William Albury	Sherry Albury
North Palm Beach	Jimmy Knight	George Warren	Wiley Livingston
Ocean Ridge	Ken Schenck		Chief Edward Hillery
Pahokee	Matthew Brock	Art Cobb	
PB Shores	Cindy Lindskoog -	Carolyn Gangwer	Capt. Steve Kniffin
Palm Beach	Sarah Hannah	Thomas Bradford	Mike Galvin

Palm Beach Gardens	Angela Wong	Todd Engle	David Reyes
Palm Springs	Bette Lowe	Karl Umberger	Jay Pickens/William Golson
Rivera Beach	William Wilkins	Troy Perry	Vincent Akhimie
Rivera Beach	William Wilkens	Troy Perry	Approval needed.
Royal Palm Beach	Ray Liggins	Robert Hill	
South Bay	Lomax Harrelle	Virginia Walker	Dennis Lawson
South Palm Beach	Rex Taylor	Lt. Nick Alvaro	Chief Roger M. Crane
Tequesta	Catherine Harding	Gwen Carlisle	Robert Garlo Al Blanchard
Wellington	Gary Clough	Ed Wasielewski	Sara Hauser
West Palm Beach	Ralph Wall	John Gonzalez	Steven Hoffmann
PB County DEM	Sheridan Truesdale	Jodie Muenz	
Northern Palm Beach County Improvement District *(Taxing District)*	Ken Roundtree	Rick Musgrove	Dan Beatty
Indian Trail Improvement District *(Taxing District)*	Jay Foy		
All Subcommittee Members			

LMS Evaluation Panel (Candidates)

CHAIR:
John Bonde
Village of Wellington

Paul Dorling

City of Delray Beach

Karen Temme

Town of Palm Beach

Paul Blockson, Chief

Lake Worth Fire Department

Joseph Kroll or Jay Foy

Town of Haverhill

Ken Roundtree

Northern P.B. County Improvement District

Alternate:

Al Sierra, Chief

PB County Fire-Rescue

LMS Planning Committee

CHAIR:
Lorenzo Aghemo, Director Planning Division (or appointee)
Palm Beach County Planning Division

Government:

Roger Wilburn
Principal Planner
Department of Community Affairs

David Kemp
Planning Director,
Town of Jupiter

Paul Dorling
Planning Director
City of Delray Beach

Everette Vaughan
Planning Manager
Palm Beach County Division of Emergency Management

Private Sector:

Link Walther /Allison Boyd
Senior Urban and Regional Planner
Continental Shelf Associates

Kim Glas
Land Use Planner AICP
Ruden, McClosky, Smith, Schuster

Jim Fleishman, Vice President
Land Research Management, Inc.

CEUS Florida Atlantic University

Flood Mitigation Technical Advisory Committee

CHAIR:
Ken Todd
Water Resources Manager
Palm Beach County Administration

Alan Wertepny
Mock, Roos & Associates, Inc.

Bob Howard
South Florida Water Management District

Dan Clark/Karen Brandon
LBFH

Tommy Strowd
Greenhorne & O'Mara

Jay Foy
Stormwater Engineering, Inc

Kyle Grandusky
SFRN, Inc.

Elizee Michel
Westgate-Belvedere CRA
Housing & Community Development

Ken Roundtree
Indian Trail Improvement District

Invited Guests:

Florida Department of Community Affairs
Engineering

Dennis Frazel
Consultant to SFWMD

CRS User Group Members

CHAIR:
Karen Temme
Palm Beach (until July 2009)

CRS Coordinator
Sheridan Truesdale
Palm Beach County Division of Emergency Management

Community	***Representative***
Atlantis	Joan Cannata-Fox, Mo Thornton
Boca Raton	Keith Carney and Carrie Seltzer
Boynton Beach	Kathleen Sweeney
Cloud Lake	Dorothy Gravelin
Delray Beach	George Diaz
Gulf Stream	Linda Harvel
Hypoluxo	Barbara Ross
Juno Beach	Andrea Jost
Jupiter	David Rotar, Rodney Carroll
Lake Clark Shores	Mary Pinkerman
Lantana	Debra Slay
Manalapan	Lisa Petersen
Ocean Ridge	Lisa Burns
Palm Beach	Karen Temme, Bill Bucklew
Palm Beach Gardens	Richard Marrero, Kate Wilson
Palm Beach County	Sheridan Truesdale, Rob Lamb, Sherita White
Palm Springs	Paulette Bragel
Wellington	Nathan Haughn and Pam Grove
West Palm Beach	Ralph Wall
Guest Member	CRS Max
Guest Member	Mike Lyons (Channel 25)
Guest Visitor	Sue Hopfensperger (Insurance Services Office)

PRIVATE-PUBLIC PARTNERSHIP
EXECUTIVE COMMITTEE

CHAIR:
Tom Serio,
Director Global Continuity, Verizon Wireless

Verdenia Baker - Deputy County Administrator, Palm Beach County

Mary Wong – President, Office Depot Foundation

Rick Murrell – President, Tropical Shipping

Kathie Kearney – Risk/Business Continuity Manager, NCCI Holding

Robert Jaffie – Security Program Manager, IBM

Mickie Valente – Communications & Process Director, Florida Council 100

Kelly Smallridge – President, Business Development Board

Kevin Johns – Director, Palm Beach County Economic Development Office

Hazel Oxendine – Director, Office of Small Business Assistance

Sheridan Truesdale – Senior Mitigation Planner, Palm Beach County Division of Emergency Management

APPENDIX N: List of Acronyms

ACLF	Adult Congregate Living Facility
AHCA	Agency Health Care Administration
ALF	Assisted Living Facility
AMR	American Medical Response
ARC	Palm Beach Chapter of the American Red Cross
ARES	Amateur Radio Emergency Services
BCC	Palm Beach County Board of County Commissioners
CAP	Civil Air Patrol
CEMP	Comprehensive Emergency Management Plan
CEOC	County Emergency Operations Center
CISD	Critical Incident Stress Debriefing
COG	Continuity of Government
CPHU	County Public Health Unit
CRS	Community Rating System
DAP	Disabled Assistance Plan
DCA	Department of Community Affairs
DEM	Palm Beach County Division of Emergency Management
DEP	Department of Environmental Protection
DFO	Disaster Field Office
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Response Team
DRM	Disaster Recovery Manager
DSR	Damage Survey Report
DUA	Disaster Unemployment Assistance
EAS	Emergency Alert System
ECO	Emergency Coordinating Officer
ECOMM	Communications Mobile Unit
EIC	Emergency Information Center
EMAC	Emergency Management Assistance Compact
EMAP	Emergency Management Accreditation Program
EMPA	Emergency Management Preparedness & Assistance
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
EOC	Palm Beach County Emergency Operations Center
EPG	Executive Policy Group
EPZ	Emergency Planning Zone
ESATCOM	Emergency Satellite Communications System
ESF	Emergency Support Function
F-SERT	Forward State Emergency Response Team
FAB	Florida Association of Broadcasters
FAC	Florida Administrative Code
FCO	Federal Coordinating Officer
FDEM	Florida Division of Emergency Management
FAC	Florida Administrative Code
FCO	Federal Coordinating Officer

LIST of ACRONYMS
(Continued)

FEMA	Federal Emergency Management Agency
FEPA	Florida Emergency Preparedness Association
FFCA	Florida Fire Chiefs Association
FIND	Florida Interfaith Networking in Disaster
FLNG	Florida National Guard
FMAP	Flood Mitigation Assistance Program
FMP	Florida Marine Patrol
FP&L	Florida Power & Light Company
FRP	Federal Response Plan
GIS	Geographic Information System
HMGP	Hazard Mitigation Grants Program
ICS	Incident Command System
IFG	Individual and Family Grant
IPZ	Ingestion Pathway Zone
LMS	Local Mitigation Strategy
LSA	Logistical Staging Area
NFIP	National Flood Insurance Program
NHC	National Hurricane Center
NOAA	National Oceanic Atmospheric Administration
NOI	Notice of Interest
NCR	Nuclear Regulatory Commission
NIMS	National Incident Management System
NTC	National Teleregistration Center
NWS	National Weather Service
PDA	Preliminary Damage Assessment
PDM	Pre Disaster Mitigation
PIO	Public Information Officer
PDRP	Post Disaster Redevelopment Plan
RACES	Radio Amateur Civil Emergency Services
RC	Recovery Center
RIAT	Rapid Impact Assessment Team
RRT	Rapid Response Team
SAR	Search and Rescue
SBA	Small Business Administration
SCO	State Coordinating Officer
SCU	Special Care Unit
SEOC	State Emergency Operations Center
SERT	State Emergency Response Team
SFWMD	South Florida Water Management District
SOP	Standard Operating Procedure
SWA	Solid Waste Authority
SWP	State Warning Point
TCRPC	Treasure Coast Regional Planning Council
VOAD	Voluntary Organizations Active in Disasters

Special Appendix I: Expanded Hazards List

Palm Beach County's Local Mitigation Strategy Plan is viewed as the umbrella plan for identifying and analyzing "all hazards" that can potentially impact the area. The county's Comprehensive Emergency Management Plan references the LMS for hazard discussions. The LMS is also the base document for the county's hazard-specific Coordinating Operating Procedures. Not all of the hazards contained in the LMS will be fully analyzed or considered high priorities for mitigation initiatives when the planned enhanced risk assessment process is implemented by LMS members and the public. In the interim, the list discussed below contains hazards not analyzed in Section 3 and Appendix A of the Plan.

This Special Appendix lists and describes the proposed expanded list of hazards resulting from the initial steps of the above mentioned risk assessment process. The development of hazard analyses and vulnerability assessments was not completed in time for inclusion in the present draft of the revised plan. These new, expanded hazard write-ups will be incorporated into the LMS Plan when analyses are completed. In the meantime there may be inconsistencies in the hazards addressed in various sections of this plan, some differences in groupings and terminology, and in the scope of analysis.

Expanded Hazards List

NATURAL HAZARDS

- Floods
  - Inland flooding
  - Coastal Storm Surge
  - HHD Dike Failure
  - Sea Level Rise/Climate Change
  - Tsunami
  - Rogue Waves
- Wind Events
  - Hurricanes/Tropical Storms
  - Tornadoes
- Severe Weather
  - Thunderstorms
  - Hail
  - Lightning
  - Straight Line Winds
  - Cold weather
  - High Temperatures
  - Drought
- Erosion
  - Coastal/Beach erosion
  - Sink holes/Subsidence
  - Soil Erosion
- Fire
  - Urban fires/Conflagration
  - Wildfires
  - Muck fires
- Invasive Pests & Diseases

MAN-MADE HAZARDS

- Homeland/Domestic Security
  - Terrorism (including biochemical threats/attacks)
  - Mass Migration
  - Civil Disturbances
  - Cyber Terrorism
  - Workplace Violence
- Technological Hazards
  - Communication Interruptions
  - Power Disruptions
  - Computer Network Disruptions
  - Infrastructure Failures
- Contamination
  - Hazmat Incidents
  - Brownfields
  - Wellfield Contamination/Depletion
  - Aquifer Contamination/Depletion
- Radiological Incidents
- Transportation Accidents

ENVIRONMENTAL HEALTH HAZARDS

- Contagious Diseases
  - Pandemic Influenza
  - Other

Hazard Descriptions

Natural Hazards

Hazard	Description
Floods	
Coastal Storm Surge	Widespread inundation of low lying coastal areas when strong and persistent winds push ocean water or lakes on shore.
Dike Failure	Unintended, potentially catastrophic releases or surges of impounded water through or over a dike via breaches (collapses), boils (underseepage), or overtopping from natural or man-made causes.
Inland Flooding	Flooding is a temporary condition of partial or complete inundation of normally dry land areas by the accumulation or runoff of surface waters caused by excessive rainfall or other sources. Flash flooding results from the rapid buildup of flood waters from intense localized precipitation. Flooding can also result from the cumulative buildup of water levels over time. Riverine flooding occurs when stream flow exceeds the capacity of the normal water course and spills over onto adjacent lands.
Rogue Waves	Large spontaneous ocean surface waves, inconsistent with existing sea states, that can be a sudden threat to large ships, ocean liners, and coastal communities.
Sea Level Rise	Sea level rise is defined as the long-term increase in mean sea level occurring in response to global climate and local tectonic changes.
Tsunami	Large and powerful seismically generated sea wave(s) capable of traveling great distances at extremely high speeds and causing considerable damage to impacted low lying coastal areas.
Wind Events	
Hurricanes/Tropical Storms	Tropical cyclones formed in the atmosphere over warm ocean areas. Wind speeds reach 74 miles per hour or more and blow in a large spiral around a relatively calm center or "eye."
Tornados	A local atmospheric storm, generally of short duration, formed by winds rotating at very high speeds, usually in a counterclockwise direction. The vortex, up to several hundred yards wide, is visible to the observer as a whirlpool-like column of winds rotating about a hollow cavity or funnel.
Severe Weather	
Cold Weather	Temperatures that drop well below normal in an area threatening sensitive crops, vegetation, wildlife and humans.
Drought	A prolonged period with no rain.
Hail Storms	Shower-like precipitation in the form of irregular pellets, or balls of ice more than five millimeters in diameter, falling from a cumulonimbus cloud.
High Temperatures	Above average temperatures that threaten sensitive crops, vegetation, wildlife and humans.
Lightning	An abrupt, high-current electric discharge that naturally occurs in the atmosphere during thunderstorms, caused by the separation of positive and negative charges in clouds.
Straight Line Winds	Strong, non-rotational winds associated with thunderstorm gust fronts or downbursts.

Erosion/Subsidence	
Beach Erosion	Loss or displacement of land along the coastline due to the action of wind, waves, currents, tides, wind-driven water, waterborne ice, runoff of surface waters, or groundwater seepage.
Sink Holes/Subsidence	A natural depression or hole in the surface topography caused by the dissolution and collapse of a cavern roof (commonly limestone bedrock) by groundwater.
Soil Erosion	The carrying away or displacement of sediment, soil, rock and other particles by wind, water or living organisms. Excessive erosion, causes ecosystem damage and loss of soil.
Fire	
Urban Fires/Conflagration	Large scale, difficult to control, structural fires in urban areas capable of spreading from structure to structure.
Muck Fires	Hard to detect underground fires, fueled by rich organic materials in subsurface soils, that can spread for considerable distances, burning tree roots and destabilizing the ground above it. They are hard to extinguish and can burn for months.
Wildfires	Any instance of uncontrolled burning in grasslands, brush, or woodlands.
Agricultural Hazards	
Invasive Pests/Diseases	Outbreaks of indigenous or invasive non-native plants, animals, insects and diseases injurious to plants and plant and animal products, and likely to cause economic or environmental harm or harm to human health. This includes naturally occurring, accidental and intentional (bio-terrorist acts) introduction of pests and diseases. Africanized bees are an example of a recent threat of this type.

Man-Made / Technological Hazards

Hazard	Description
Homeland/Domestic Security	
Civil Disturbances	Acts of violence and disorder by groups or individuals as a form of protest or celebration requiring intervention in order to maintain public safety. Common triggers include: racial tension, labor strikes/unrest, unemployment, religious conflict, civil disobedience; prison riots; unpopular political actions, or the unavailability of critical services or goods.
Cyber Terrorism	The premeditated use (or threatened use) of information technology by terrorist groups and individuals to further their social, ideological, religious, political or other agendas by such acts as launching attacks against networks, communication and telecommunication infrastructures, critical services, etc. or exchanging information or threats electronically. Most commonly these acts take the form of introducing viruses into vulnerable networks, web site defacing, and denial of services.
Mass Migration	Illegal immigration or outmigration (emigration) of large numbers of refugees, asylum-seekers, economic migrants or other groups of people across national borders, in a way that violates U.S. immigration laws. Common purposes include escaping oppressive conditions or poverty and family reunification.
Terrorism	The unlawful use of force or violence against persons or property for the purpose of intimidation, coercion or ransom, often for

	ideological or political reasons.
Workforce Violence	Violence, threats, intimidation or other disruptive behavior taking place in a workplace, usually perpetrated by disgruntled current or former employees, violent domestic partners, unhappy clients or customers, or individuals demanding access to cash, stock, drugs, or otherwise intent on committing criminal or unlawful acts.
Technological Hazards	
Communication Failure	A severe interruption or loss of private and/or public communications systems, including but not limited to transmission lines, broadcast, relay, switching and repeater stations as well as communications satellites, electrical generation capabilities, and associated hardware and software applications necessary to operate communications equipment. These disruptions may result from equipment failure, human acts, (deliberate or accidental) or the results of natural or man-made disasters.
Computer Network Disruptions	Computer systems network failures are primarily caused by power failures, electromagnetic pulses and operating systems error. Increasingly they are also caused by viruses, system bugs and hackers. Consequences of computer network disruptions include: major network overload, significant losses to the business sector due to downtime, failure of networks reliant on computer systems, secondary hazards such as fire, potential sanitation problems, risk to disruption of medical services, and high risk traffic confusion and accidents.
Infrastructure Failures	Loss or incapacity of critical infrastructure such as bridges, roads, dikes, water and sewage systems, rail beds, etc. from natural hazards, accidents, age and deterioration, poor maintenance, or terrorism that has a debilitating impact on local, regional and national economic security, commerce, services, and public health and safety.
Power Disruptions/Failure	An interruption or loss of electrical service due to disruption of power transmission caused by accident, sabotage, natural hazards or equipment failure. Disruptions are of 3 types: “Blackouts” (where power is lost completely), “Brownouts” (where there is a drop in voltage in an electrical power supply), and “Dropouts” (where loss of power is only momentary). Interruptions can be local or massive involving the entire electric grid system. Life critical facilities and businesses are particularly at risk.
Contamination	
Aquifer/Wellfield Contamination/Depletion	Over-exploitation of fresh water aquifers with limited recharge can deplete groundwater supplies and invite contaminated water (including saltwater intrusion), creating unusable wells, deteriorated water quality, reduction of water in streams and lakes, and land subsidence.
Brownfields	
Hazardous Materials Incidents	Uncontrolled releases of materials, from fixed sites or during transportation, which are capable of posing risks to health, safety, property and the environment. Includes uncontrolled releases from transporting pipelines. Pertains primarily to sites covered under Section 106 of CERCLA, 42 U.S.C. § 9606
Radiological Incidents	
Nuclear Accidents/Terrorist Acts	The accidental release or suspected release of radioactive material that poses an actual or perceived hazard to public safety, national security and or the environment. Potential sources of release include: reactor plant accidents, lost radioactive material

	sources, transportation accidents involving nuclear or radioactive material, medical incidents, terrorist incidents involving radiological dispersal devices (RDDs) or improvised nuclear devices (INDs), warfare.
Transportation Accidents	
Transportation Accidents	Human-caused or natural hazard-induced accidents involving road, rail, air and maritime systems that threaten the lives or property of a significant number of people and/or the environment.

Environmental Health Hazards

Contagious Diseases	
Contagious Diseases & Pandemics	Infectious diseases that are spread from one infected person or species to another via bodily fluids, contaminated objects, airborne inhalation, food or through vector-borne spread. Global epidemics or pandemics of diseases such as small pox and influenza are capable of killing massive numbers of people over vast geographic areas and totally disrupting the lives of survivors.

Special Appendix II: The Hazard Environment

Introduction

This section provides a comprehensive profile of Palm Beach County's hazard environment as a basis for assessing the county's susceptibility and vulnerability to and potential losses from natural, man-made, and environmental health hazards.

The FEMA requirements addressed in whole or in part by this section include:

Requirement §201.6(c)(2)(ii)(A): The plan *should* describe vulnerability in terms of types and numbers of] existing and future buildings, infrastructure, and critical facilities located in the identified hazard area….

Requirement §201.6(c)(2)(ii)(B): The plan *should* describe vulnerability in terms of types and numbers of an] estimate of the potential dollar losses to vulnerable structures identified in §201.6(c)(2)(ii)(A) of this description the methodology used to prepare the estimate….

Requirement §201.6(c)(2)(ii)(C): The plan *should* describe vulnerability in terms of types and numbers of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.

Profiles are organized into three major categories: The Natural Environment; The Social Environment; and the Built Environment.

Key profile topics in each category include:

The Natural Environment

- Location
- Geography
- Climate
- Topography

The Social Environment

- Demographics
- Jurisdictional Profiles
- Land Use
- Social & Cultural
- Economic/Business Profile
- Transportation Infrastructure & Services
- Water Management
- Emergency Services

The Built Environment

- Residential Building Stock
- Non-residential Building Stock
- Age and Value of Building Stock

- Type of Construction
- Building Codes and Regulatory Measures

The Natural Environment

Palm Beach County's geographic location, coastal beauty, exotic environmental resources and tropical climate have greatly influenced its explosive growth and prominence as a great place to live, work and visit. However, these same natural characteristics also contribute to its vulnerability to a full range of natural hazards.

Location:

Palm Beach County is located along the subtropical southeast coast of Florida. The center of the county is approximately 60 miles north of Miami and 150 miles southeast of Orlando. It borders Martin County to the north, the Atlantic Ocean to the east, Broward County to the south, Hendry County to the west, and extends into Lake Okeechobee in the Northwest, where it borders Okeechobee County and Glades County at a point in the center of the lake.

Geography:

Palm Beach County is the largest county southeast of the Mississippi River (larger than the states of Rhode Island and Delaware). It is comprised of 2,268 square miles of land and 245 square miles of water bodies. The coastal and beach areas of the county extend 45 linear miles from north to south. At its widest point, the county stretches 53 miles from east to west. Its water area includes a portion of Lake Okeechobee, the second largest fresh water lake in the U.S.

The eastern County is a thriving urban area while the western area of the County is more rural with wetlands covering the southwestern part and agriculture dominating the northwestern end. A string of barrier islands parallel the coast separated from the mainland by the Intracoastal Waterway. Four inlets (Jupiter Inlet, Lake Worth Inlet, Boynton Beach Inlet and Boca Raton Inlet) connect the Intracoastal Waterway to the Atlantic Ocean.

Of the 45 miles of ocean shoreline in Palm Beach County, only 3.5 miles are under County jurisdiction. Twenty-three of the thirty-eight municipalities in Palm Beach County border either the Intracoastal Waterway or the Atlantic Ocean. Numerous small unincorporated areas are interspersed between municipalities in the coastal region, with pockets located near the Martin County line, Jupiter Inlet, Jupiter Beach, Juno Beach, Palm Beach Gardens, as well as small pockets near Delray Beach, Boynton Beach and Briny Breezes.

Countywide, development has affected coastal natural resources through beach front development, stormwater runoff, destruction of habitats, and dredge and fill projects. Enforcement of existing regulations and the implementation of new regulations as necessary are considered vital to reducing further degradation of coastal resources.

The total length of estuarine shoreline in Palm Beach County is 268 miles, 14 miles (5 percent) is located within unincorporated areas. Seagrass and macroalgae coverage of the total submerged area for Lake Worth Lagoon is 2,110 acres (35 percent of the total area). For the

remainder of the estuarine waters there are 270 acres (12 percent of the total area). Generally, the habitat quality of the estuarine ecosystem and beach/dune and near shore ecosystems is best in the County's northern end where development has progressed at a slower pace. Palm Beach County has 462 acres of natural coastal upland acreage in public ownership and 59 acres under private control. Due to the popularity of coastal development, the coastal strand is regarded as the most rapidly disappearing portion of the County.

Palm Beach County possesses a complex network of highly sensitive water features. Lake Okeechobee is the primary water reservoir for South Florida. A system of lakes runs north/south within 8 miles of the east coast. These include: Lake Mangonia (540 acres in size) in West Palm Beach; Clear Lake (401 acres) in West Palm Beach; and Lake Osborne (356 acres) in southern Lake Worth and northern Lantana. Four major canals from Lake Okeechobee to the Atlantic Ocean cut through the county: the Miami Canal, North New River Canal, Hillsboro Canal and West Palm Beach Canal. The West Palm Beach Canal connects Lake Okeechobee and Lake Worth on the east coast. Lake Worth is interconnected with the Intracoastal on its north and south borders. A vast network of canals, all part of the water management system, are interconnected with the West Palm Beach Canal. The County's only river, the Loxahatchee River, runs approximately 8 miles through the northern section of the county, interconnects with the Loxahatchee Slough, and flows through the Jupiter Inlet to the ocean.

Climate:

The County's pleasant year-round climate contributes to its world-wide reputation as a place possessing an outstanding quality of life. It enjoys an enviable, average annual temperature of 78° F. The dry season is associated with the winter months. The wet season extends from spring through summer, with an average annual rainfall of 61.7 inches.

Topography:

The Atlantic Ocean touches the eastern half of the county. The northwest part of the county includes Lake Okeechobee. The terrain is sub-tropical, featuring plenty of lush palm trees, tall pines, and a multitude of vivid tropical flowers that bloom year round.

The county is quite flat. The mean elevation is 15 feet above sea level. Ocean coastal beachfront gradually slopes up to a dune line with top elevations of 12 to 23 feet. From the dune line there is a gradual downward slope to lake and inland waterway frontage with a width of from a few hundred feet to a half mile. From there, land slopes upward to a coastal ridge then downward to elevations of 5 to 12 feet in a drainage valley. Further inland elevations remain relatively stable.

The Social Environment

Demographics:

According to the U.S. Census Bureau, as of 2007, the county had an estimated population of 1,351,236 making it the third most populous in the state of Florida and the twenty ninth most

populous in the United States. It is projected to increase to about 1.4 million by 2012. In the past several decades, Palm Beach County's population rose far more quickly than the state, nation, and the Southeast. Compared to the growth rates of the nation's 10 largest metro areas, Palm Beach County ranked third in population growth during the period 1990 to 1998. It has since dropped down on the list according to the U.S. Census Bureau.

With wealthy coastal towns such as Palm Beach, Jupiter Island, Manalapan, and Boca Raton within its limits, as well as equestrian mecca Wellington and golfing haven Palm Beach Gardens, Palm Beach County is among Florida's wealthiest counties in terms of per capita personal income.

The age, language diversity and demographic make-up of the county's population complicate disaster preparation, response and recovery.

Municipal Jurisdictions:

The county is comprised of 38 incorporated municipalities. Each municipality enacts and enforces policies and laws within its incorporated boundaries, with the exception of county-wide ordinances specified in the Charter of Palm Beach County.

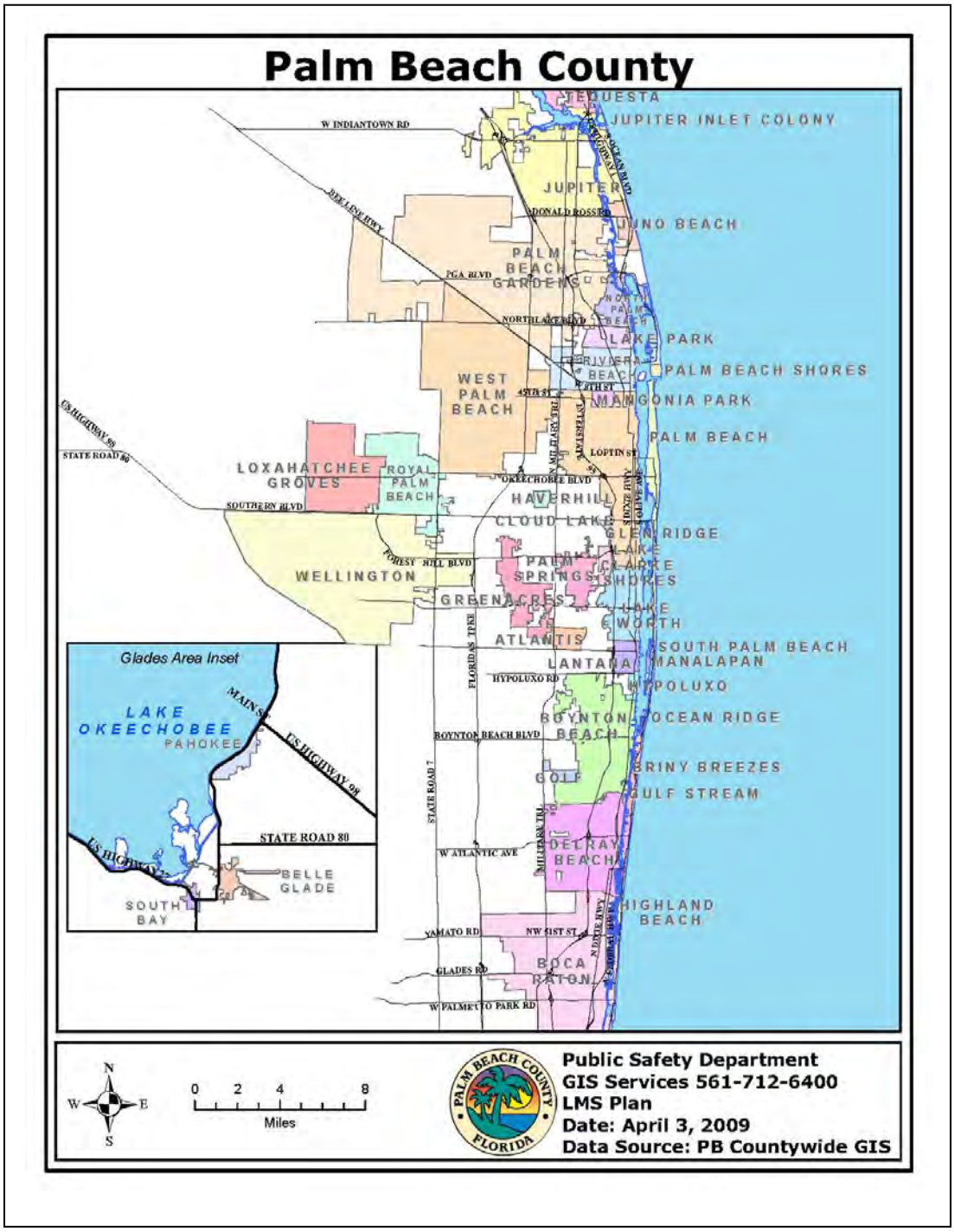
About 55 percent of County's residents live in municipalities; the remainder reside in unincorporated areas. The largest city both in area and population is West Palm Beach, which has an incorporated population of approximately 95,617 and covers 52 square miles. Boca Raton is the second most populous city with 82,224 residents and Boynton Beach is third with 67,606. The county's smallest town in population is Cloud Lake with approximately 171 residents. The smallest in area is Briny Breezes at just under one-half square mile. Approximately 94% of the county's population resides within 12 miles of the coast.

The table below provides a brief demographic profile of each jurisdiction:

Jurisdictional Profiles

Jurisdiction	Population 2007	Population Density (Pop/Sq Mile)	Projected Population 2012	Median Age	Median Household Income	Housing Units
Atlantis	2,125	1,505.3	2,218	60.9	$87,554	1,210
Belle Glade	16,196	3,476.8	2,218	29.3	$26,543	5,846
Boca Raton	82,224	2,948.3	87,551	43.7	$73,951	41,377
Boynton Beach	67,606	4,210.9	72,869	42.8	$47,481	34,484
Briny Breezes	492	6,434.2	557	57.5	$79,802	545
Cloud Lake	171	2,716.4	174	34.3	$54,718	68
Delray Beach	67,342	4,237.2	72,667	44.2	$52,929	35,790
Glen Ridge	283	1,252.5	288	34.3	$54,718	106

Golf	263	311.5	287	58.0	$100,822	160
Greenacres	30,133	6,452.9	32,021	40.4	$43,941	15,402
Gulf Stream	766	921.6	803	51.5	$65,278	575
Haverhill	1,565	2,727.5	1,645	31.1	$48,092	608
Highland Beach	4,110	6,967.3	4,359	62.0	$89,207	3,983
Hypoluxo	2,679	4,151.9	3,158	45.7	$55,942	1,823
Juno Beach	3,551	2,540.4	3,761	54.4	$69,266	2,635
Jupiter	47,562	2,280.9	52,387	41.8	$68,384	25,394
Jupiter Inlet Colony	467	2,343.5	540	57.8	$68,114	344
Lake Clarke Shores	3,606	3,425.5	3,721	43.0	$68,568	1,518
Lake Park	9,125	4,201.4	9,422	35.2	$39,580	3,838
Lake Worth	37,403	6,631.7	39,068	34.9	$36,059	16,807
Lantana	10,012	4,351.4	10,429	38.2	$42,990	4,691
Loxahatchee Groves	3,122	260	3,335	35	$58,660	
Manalapan	364	851.2	394	49.5	$145,385	262
Mangonia Park	2,412	3,401.9	3,225	35.6	$42,958	1,007
North Palm Beach	13,120	3523.8	13,897	47.7	$63,984	7,930
Ocean Ridge	1,924	2,054.0	2,132	57.5	$91,589	1,819
Pahokee	6,637	1,230.2	7,110	25.9	$27,787	2,131
Palm Beach	10,948	2,738.0	11,316	60.9	$111,550	10,365
Palm Beach Gardens	43,467	777.1	49,213	44.4	$71,671	21,970
Palm Beach Shores	1,314	5,710.5	1,360	50.0	$51,021	1,166
Palm Springs	12,321	7,428.9	12,785	38.2	$41,789	6,223
Riviera Beach	34,331	4,095.8	37,401	36.9	$40,955	16,281
Royal Palm Beach	29,630	2,942.4	35,262	38.2	$67,897	11,124
South Bay	4,093	1,103.1	4,263	31.6	$29,652	1,000
Tequesta	5,673	2,595.9	6,034	46.6	$70,288	2,921
Wellington	46,198	1,472.9	51,326	38.5	$86,929	18,076
West Palm Beach	95,617	1,684.5	104,716	37.5	$46,217	47,388
Total Incorporated	**773,241**					**381,244**



Land Use:

Planners view the county as being comprised of 5 land use tiers. Briefly they can be described as follows:

Urban/Suburban Tier

This tier, the eastern most tier, accommodates the bulk of the population and the need

for employment, goods and services, cultural opportunities, and recreation. It supports a variety of lifestyle choices, ranging from urban to residential estate; however, the predominant development form in the unincorporated portion is suburban in character. The older communities are primarily in municipalities within approximately 2 miles of the Atlantic Ocean. Most of the neighborhoods within the tier are stable and support viable communities. However, due to the period in which many of the coastal communities were built and the County's efforts to keep pace with rapid growth in its western areas, some of the eastern areas did not receive a full complement of urban services. Despite aggressive redevelopment programs, much of the building stock is quite old.

Exurban Tier

The Exurban Tier lies between the Urban and Rural Tiers and supports residential subdivisions created prior to 1970, before the adoption of the Comprehensive Plan and its regulations. Historically, these areas have been considered rural due to a sparse development pattern, large heavily treed lots, presence of small agricultural operations including equestrian uses, and a desire for minimal services and regulation. However, growth has marked a change in the character from rural to more suburban and semi-rural, or exurban, as the existing and vested 1.25 acre lots develop with single family homes. The increase in population has caused an increase in the demand for services. A recognition of the existing development pattern, the demand for services, and a desire to maintain the tier's rural character present planning challenges.

Rural Tier

The Rural Tier, west of the Exurban Tier, includes agricultural land and rural settlements that range in density from 1 dwelling unit per 5 acres to 1 dwelling unit per 20 acres. The area supports large agricultural operations as well as single-family homes with small family-owned agricultural businesses, including equestrian-related uses. Due to the declining availability of land and the increase in population in the Urban and Exurban Tiers, the Rural Tier is beginning to experience pressure for greater densities normally associated with more urban areas. This tier poses the greatest threat in terms of wildland-urban interface fires.

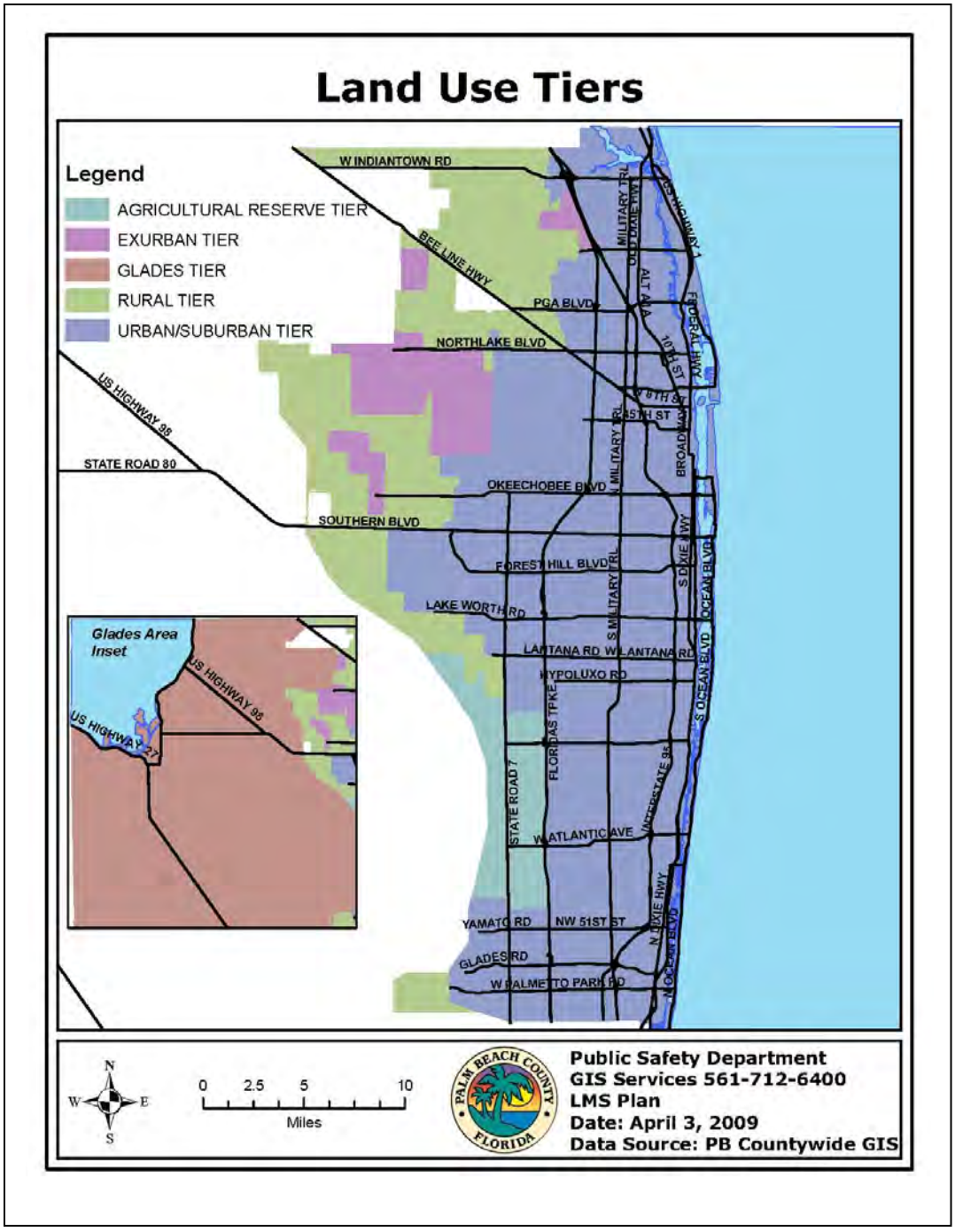
Agricultural Reserve Tier

The Agricultural Reserve area is a portion of the County that encompasses unique farmland and wetlands. Based on policy direction adopted by the Board of County Commissioners in 1995, it is envisioned to be preserved primarily for agricultural use. If this becomes infeasible it will be developed at low residential densities.

Glades Tier

The Glades Tier is located west of the Conservation Areas and Twenty Mile Bend and includes the Glades Communities. This area is designated primarily for specialized agricultural operations and recreational uses of Lake Okeechobee. Its proximity to the Lake, its geographical distance from the services of coastal communities, and its lack of economic resources, pose particular challenges with regard disaster preparedness and hazard mitigation.

These land use tiers are depicted on the map below.



Economy:

Palm Beach County is an appealing, asset-rich locale that has enjoyed great economic success. In addition to its reputation as a tourist destination, it is also widely recognized as a great place to live and work and continues to be a magnet for retirees.

Palm Beach County is one of the nation's wealthiest counties, with per capita personal income levels nearly 50 percent higher than the state and national averages. It has a vibrant and diverse economic base, sound financial position and moderate debt levels. Four of the County's municipalities (Jupiter Island, Manalapan, Gulf Stream and Palm Beach) rate in the top 25 nationally in terms of income. Overall the County is the third richest county in Florida in terms of per capita income.

Of the 3,100 counties nationwide, Palm Beach is one of only 22 to earn the highest possible bond rating of AAA by all three of the major rating agencies. Palm Beach County is the only Florida county to have earned this designation.

The County has many advantages, including international name recognition, exceptional natural and built resources such as the grand canal system (four major canals that run through the County), rich farm land, extensive waterfronts, and growing science and industrial bases. Three Palm Beach County cities, Boca Raton, West Palm Beach, and Delray Beach, have won national awards for their beautiful downtowns.

The County is the host site for the National Horse Show, hosts the globally recognized Palm Beach International Film Festival, and hosts major Fortune 500 companies such as Lockheed Martin, Pratt & Whitney, IBM and the Corporate Headquarters of Office Depot. It is home to the most prominent life science institute in the world, the Scripps Research Institute. On over 250,000 acres in the western communities, Palm Beach County farmers grow the largest quantities of winter crops in the U.S. Its museums, waterfronts and botanical gardens are acclaimed throughout the nation. International Arts and Polo events and a wealth of classic ballet, opera, pop culture and sports events fill the schedules of its communities. The county's subtropical climate attracts tourists and new residents from around the world.

Professional and business services, educational and health services and financial services account for 43% of Palm Beach County's total employment. Between 2005 and 2015 the professional and business services and educational and health sectors are expected to experience the greatest growth.

The table below shows the current and projected county employment breakdown by industry sector:

Current and Projected Employment by Industry Sector

Industry Sector	Employment 2005 (000's)	% of Total	Employment 2015 (000's)
Professional & Business Services	128.4	18.2	161.2
Educational & Health Services	88.8	12.6	118.8
Financial Activities	85.9	12.1	97.3
Retail Trade	79.0	11.2	84.5
Leisure & Hospitality	71.3	10.1	81.0
Construction	49.2	7.0	58.2
Manufacturing	22.9	3.2	23.2
Wholesale Trade	22.4	3.2	22.6
Transportation & Utilities	15.0	2.1	17.1

Information Services	13.1	1.8	14.4
Agriculture	6.2	.9	5.5
Other	124.5	17.6	142.5
Total Employment	**707.1**	**100.0**	**826.3**

Source: South Florida Regional Planning Council and Regional Economic Models, Inc.

Businesses in Palm Beach County

There are roughly 49,164 businesses in Palm Beach County that supply products and services. Although the County has a diverse variety of producers, economic development interests have targeted five particular business clusters. These clusters include: Communications & Information Technology; Aerospace & Engineering; Agriculture & Food Processing; Business & Financial Services and Medical & Pharmaceutical products.

Industrial Businesses:

Palm Beach County boasts some of the finest manufacturers in the world. Below is a list of the County's largest industrial businesses in terms of number of employees:

Palm Beach County
Largest Industrial Companies ('07)

Company	Employees	Product	Location
U.S. Sugar Corp.	1,800	Agriculture	Belle Glade
Florida Crystals	1,800	Agriculture	West Palm
Palm Beach Newspapers	1,275	Newspaper Publishing	West Palm
Hollander Home Fashions	1,200	Home Furnishings	Boca Raton
Southland Forming Inc	1,200	Concrete Contractors	West Palm
A. Duda & Sons Growers	1,100	Agriculture	Belle Glade
Thomas Produce Co.	1,000	Agriculture	Belle Glade
Pratt & Whitney Rocketdyne	850	Aerospace Engineering	West Palm
Walgreens Distribution	850	Pharmaceuticals, Consumer Goods	Jupiter
Cheney Brothers	799	Food Distribution	Riviera Beach
SimplexGrinnell LP	698	Security System Manufacturing	Jupiter
Sugar Growers Coop.	662	Agriculture	Belle Glade
IBM Corp.	600	Electronics R&D	Boca Raton
Thermo Electron North America	600	Professional Equipment & Supplies	West Palm
Tyco International Ltd	600	Machinery Manufacturing	Boca Raton
Implant Innovations	560	Dental Implants	PB Gardens
Sensormatic Electronics Corp	500	Security System Manufacturing	Boca Raton
Belcan Engineering Group	467	Aerospace Engineering	PB Gardens
C Mac Packaging Systems Inc	460	Paperboard Mills	West Palm
Sikorsky Aircraft	455	Helicopters	West Palm
Jarden Consumer Solutions	440	Small Home Appliance Manufacturing	Boca Raton
Siemens Companies	421	Telecommunications	Boca Raton
Quality Concrete & Rental Inc	420	Concrete Contractors	West Palm
Du Bois Harvesting	400	Agriculture	Boynton
Signet Diagnostics Imaging	400	Device Manufacturing	Boca Raton
Pepsi Cola Bottling Co.	365	Bottled Soft Drinks	Riviera
Lockheed Martin Corporation	363	Aerospace Engineering	Riviera
Florida Public Utilities	355	Gas Utilities	West Palm
Catalfumo Construction, Inc	350	Construction	PB Gardens
Thies Distributing	340	Beer Distribution	Boca Raton
Hardrives, Inc.	305	Highway Construction	Delray
Rinker Materials Corp	300	Concrete Manufacturing	West Palm
Rexall Sundown	300	Pharmaceutical	Boca Raton
Zicon, LLC	250	Electronics Manufacturing	Boca Raton
Ranger Construction Industries	245	Highway Construction	West Palm
Anspach Companies	240	Surgical Equipment	PB Gardens

American Media International	235	Newspapers	Boca Raton
Sun Sentinel Newspapers	215	Newspaper Publishing	Delray Beach
Serta Mattress	207	Mattress Manufacturing	Riviera
LRP Publications	200	Multimedia Publishing	PB Gardens
Kimley-Horn	200	Engineering	West Palm
Garden of Life	190	Nutritional supplements	West Palm
NABI	171	Pharmaceuticals	Boca Raton
Atlantis Foods	148	Manufacture Food Products	Lake Worth
Hedrick Brothers Construction	130	Construction	West Palm
SV Microwave	130	RF Connectors Manufacturing	West Palm
DiVosta Building Corp.	125	Construction	PB Gardens
General Dynamics	109	Aircraft outfitting	West Palm

Source: Business Development Board

Service Companies:

In the services sector of the economy, a strong cluster of companies is found in Business and Financial services. This cluster represents more than 11,000 companies. Below is a partial list of major service-oriented employers in Palm Beach County, ranked by number of employees.

Palm Beach County
Largest Service Organizations ('07)

Organization	Employees	Service	Location
School Board	21,707	Education	County Wide
Palm Beach County	11,293	County Government	West Palm
Tenet Healthcare Corp. DelrayCommunity , PB Gardens Med. GoodSamaritan, Pinecrest Rehab., West BocaMed. Ctr	4,500	Healthcare	County Wide
HCA (Hospital Corp of America) *Palms West, Columbia,, JFK Medical Ctr*	3,411	Healthcare	County Wide
Florida Power & Light (Hdqtrs)	3,250	Utilities	Juno
Florida Atlantic University	2,923	Higher Education	Boca Raton
The Breakers	2,300	Hotel	Palm Beach
Office Depot (Hdqtrs)	2,180	Office Supplies	Delray
Boca Raton Community Hospital	1,860	Health Care	Boca Raton
Boca Raton Resort & Club	1,650	Hotel Boca	Raton
Bethesda Memorial Hospital	1,600	Health Care	Boynton
City of West Palm Beach	1,544	City Government	West Palm
Veterans Health Administration	1,500	Health Care	West Palm
Jupiter Medical Center	1,400	Health Care	Jupiter
AT&T	1,300	Communications	West Palm
City of Boca Raton	1,297	City Government	Boca Raton
Tropical Shipping	1,000	Containerized Ocean Shipping	Riviera
Wackenhut Corporation	990	Security Services	PB Gardens
Palm Beach Community College	982	Higher Education	Lake Worth
Wachovia	950	Banking	County Wide
NCCI	900	Insurance Actuarial	Boca Raton
South Fl. Water Management Dist.	900	Regional Gov't., Special Purpose	County Wide
National City	880	Consumer Lending	West Palm
City of Boynton Beach	833	City Government	Boynton
Washington Mutual Bank	825	Banking	County Wide
PGA National Resort & Spa	800	Hotel	PB Gardens
Virtual Bank	800	Banking	PB Gardens
Palm Beach Atlantic University	738	Higher Education	West Palm
CSC Applied Technologies LLC	651	Facilities Support Services	West Palm
Prime Management Group Inc	640	Residential Property Managers	Boca Raton
Blue Green Corp.	630	Leisure & Resort Communities	Boca Raton
Bank of America	615	Banking	County Wide
City of Palm Beach Gardens	501	City Government	PB Gardens
Churchill Benefit Corp/Yurcor	500	Computer Systems Design Services	Delray
Verio	450	Wired Telecommunications Carriers	Boca Raton
First NLC Financial Services, LLC	440	Residential Mortgage	Boca Raton
Lynn University	438	Higher Education	Boca Raton
SYSCO Food Services	417	Food Distribution	Riviera
Applied Card Systems	400	Call Center-Credit Cards	Boca Raton
Florida Public Utilities	355	Utilities	West Palm

Oasis Group	325	HR Services	West Palm
Taylor & Francis Group LLC	293	Publisher	Boca Raton
Choicepoint Public Records	280	Computer Programming	Boca Raton
Palm Beach Gardens Marriott	277	Hotel	PB Gardens
Ocwen Financial Corp	258	Real Estate Credit	West Palm
Stain Safe Inc	250	Call Center-Chemical Products	PB Gardens
The Scripps Research Institute	230	Life Sciences Research	Jupiter
DayJet	214	Air Transportation	Boca Raton
AMR-American Medical Response	213	Ambulance Service	Lake Worth
Oxbow Power Corp	200	Life Sciences Research	West Palm
Commerce Bank	200	Banking	West Palm
Lynn Insurance	185	Insurance	Boca Raton

Source: Business Development Board, Harris Infosource (updated 10/2007)

Businesses by Type and Size:

Eighty percent of Palm Beach County based businesses have fewer than ten employees. Professional/Scientific, Retail and Healthcare and Construction businesses account for 49% of the total business base. The chart below provides a breakdown of businesses by size and industry classification.

Number of Establishments by Size by Industry

Industry Description	Total Estab's.	1-4	5-9	10-19	20-49	50-99	100-249	250-499	500-999	1K+
Total All Industries	42,648	27,597	6,558	4,086	2,653	990	587	109	42	26
Ag. Support, Forestry, fishing	78	60	3	10	2	1	0	1	1	0
Mining	24	17	3	2	1	0	1	0	0	0
Utilities	30	16	4	0	1	1	5	0	1	2
Construction	4,266	2,953	569	370	252	80	32	5	3	2
Manufacturing	975	550	156	109	106	32	15	5	1	1
Wholesale Trade	2,436	1,701	359	200	113	37	20	3	2	1
Retail Trade	5,458	2,941	1,117	705	364	167	148	13	3	0
Transportation /Warehousing	773	552	69	58	58	21	11	2	2	0
Information	738	454	83	83	58	27	23	7	1	2
Finance & Insurance	3,175	2,039	553	323	186	50	16	6	2	0
Real Estate, Rental, Leasing	2,766	2,228	285	165	55	16	13	2	1	1
Professional, Scientific, Tech	6,746	5,299	751	394	219	56	18	7	1	1
Mgmt. of Companies	217	84	33	27	34	10	16	6	3	4
Admin, Suppt, Waste Mgmt.	3,000	2,079	353	218	175	87	58	20	7	3
Educational Services	469	287	49	42	54	21	11	2	2	1
Health Care & Social Assist.	4,511	2,458	1,057	520	281	90	77	12	10	6
Arts, Entertainment & Rec.	796	512	99	43	54	44	28	14	2	0
Accommodation & Food Svcs	2,478	906	378	429	466	221	73	3	0	2
Other Services	3,625	2,378	634	388	173	29	22	1	0	0
Unclassified	87	83	3	0	1	0	0	0	0	0

Source: Business Development Board

Key Segments of Palm Beach County's Economy

The 2005 Economic Summit identified and discussed several key segments of the county. Some key observations from the summit include the following:

Industries of the Mind

The Industries of the Mind segment represents the existing business clusters in Palm Beach County that address engineering and the flow of ideas and technology – especially bioscience, aerospace, marine science, telecommunications, information technology (IT), and film and television.

Within each of these industries Palm Beach County has either a Fortune 500 Company or corporate headquarters as an anchor. For example, Lockheed Martin Corporation's undersea defense system anchors the marine science industry. The formal collaboration on the bird flu virus between IBM and the Scripps Research Institute is representative of engineering, flow-through technology, and the biotechnology sector. Pratt & Whitney anchors the aerospace industry while the Palm Beach County International Film Festival, ranked as one of the top 25 film festivals in the world, supports the film and television industry.

Finance & Trade

Palm Beach County is a highly regarded location for financial and business investments from around the world as evidenced by the proliferation of exclusive international banking institutions located here. As the global economy continues to evolve, a high quality international investment interest continues to grow and attract international lenders. The County's emergence as a center of international trade, finance, and investment establishes the area as an international prototype for sustainable economic growth.

Key strengths that support the County's establishment as a hub for international trade, finance, and investment are its well known name brand and name recognition. Another strength is the County's beneficial infrastructure – its central location for exporting goods both nationally and internationally. The County's existing integrated transport system of seaport, airports, railways and highways is an asset to this industry's future. Establishment of an Inland Port close to Lake Okeechobee is being aggressively considered. This would further enhance the County's competitiveness for international trade business activities.

Education

Palm Beach County has over 530 educational institutions. Its public school system is the 10th largest in the nation with over 176,000 K-12 students and 94 Career Academy Programs within 163 schools. Over 100 private schools are based in Palm Beach County as well.

Palm Beach County currently has 11 colleges and universities with a combined enrollment of over 75,000 students. These include: Barry University (Enrollment of 9,324); Florida Atlantic University (25,704); Kaplan University; Keiser University (10,395); Lynn University (2,720); Lincoln College of Technology (1,500); Northwood University (1,000); Nova Southeastern University; Palm Beach Atlantic University (3,264); Palm Beach Community College (20,416); and South University (369).

Agribusiness, Equestrian & Food Sector

The Agribusiness, Equestrian and Food sector is one of Palm Beach County's historic and

consistent economic generators. Both its traditional agriculture and growing equestrian industries benefit from the subtropical climate and a nationally recognized brand identity. Several key strengths that support the Agriculture, Equestrian and Food sector are the county's established infrastructure to support agriculture and equestrian activities. These include being one of the top areas in American for growing winter crops and nursery and ornamental plants, the capacity to house 14,000 horses at peak season, a growing population that provides more customers for local production, the International Horse Show, and high profile equestrian and polo competitions--all of which contribute to the Palm Beach image.

Major issues concerning the Agricultural, Equestrian and Food sector are the rapidly diminishing supply of land available for these use, the need for new processing methods for agricultural products, increasingly strict water regulations, fierce global competition in agricultural products, and the lack of a comprehensive plan for growing the equestrian industry.

Quality of Place Attractions

Quality of Place is the term used by the County to describe a location where people experience an inviting and stimulating environment that engages them on physical, emotional and spiritual levels and makes people feel safe, accepted, and comfortable and find enjoyment. Key factors that shape Palm Beach County's quality of place are its natural assets, arts and culture and the built environment. Palm Beach County enjoys numerous natural resources and conservation lands, parks and beaches. The County boasts world-class museums, performing arts centers, notable historical sites and a mix of multicultural festivals.

Recreation & Sports

With 45 miles of stunning coastline, Palm Beach County is an outdoor-lover's paradise. Visitors and residents can go fishing, diving and boating on the County's many waterways or relax on its pristine beaches. As home to the Professional Golfers Association of America, Palm Beach County has long been known as a golfer's paradise, with more than 150 challenging courses.

A number of parks and recreational facilities offer everything from picnic areas and bicycle paths to ball fields and tennis courts. Other popular outdoor attractions include the Palm Beach Zoo at Dreher Park and Lion Country Safari.

The Roger Dean Stadium complex in Jupiter is a popular destination for baseball fans. It is the spring training site for the Florida Marlins and St. Louis Cardinals and the minor league home for the Jupiter Hammerheads and the Palm Beach Cardinals throughout the summer.

Arts & Culture

Palm Beach County boasts a wide range of cultural opportunities, including music, theater, dance, and museums. The Kravis Center for the Performing Arts hosts the Palm Beach Broadway Series, Ballet Florida, Palm Beach Opera and the Florida Philharmonic and features world-class entertainers and artists. Palm Beach County is home to many notable museums, including the renowned Norton Museum of Art which features a permanent collection of fine art and offers special exhibitions, classes, workshops and other special events. Other notable venues include the Boca Raton Museum of Art, the Flagler Museum, and The Morikami Museum and Japanese Gardens.

Palm Beach County's Transportation System

Palm Beach County's Transportation System consists of considerable road, rail, air and ocean resources and capabilities borne out of periods of explosive growth. Urban and transportation planners are collaborating to mold these resources into a more highly integrated and balanced network that will better meet today's and tomorrow's needs. Below is a description of key elements of Palm Beach County's current transportation systems and capabilities.

Roads

According to the Florida Department of Transportation, the Florida Intrastate Highway System (FIHS) carries almost 30 percent of the State's total traffic while it represents only 3 percent of Florida's roads. Florida's Turnpike, Interstate 95, SR 60, SR 70, SR 710, SR 80 and US 27 make up the north-south portion of the FIHS in the Treasure Coast Region. The health of this roadway network is extremely important to the health of the region's economy and growth. Interstate 95 and the Florida Turnpike are the primary routes for the local, regional and interregional transportation of people and goods. They also serve as the primary disaster evacuation routes for Southeast Florida.

Including federal, state and local roads, Palm Beach County has a total of 6,672.3 linear (center line) miles of named roads, highways and expressways.

Bridges

There are approximately 587 bridges in Palm Beach County, including 243 state-owned bridges, 306 county and local bridges, and 38 bridges on the Florida Turnpike.

Palm Beach County's Road & Bridge Section maintains 7 Bascule Bridges over the Intracoastal Waterway and one Swing Bridge at Point Chosen. It also maintains 271 various types of fixed bridges, including interstate highway crossings, canal crossings, and pedestrian bridges.

The County has 230 bridges identified on the National Bridge Inventory System. Some carry as many as 50,000 vehicles per day. One bridge, the Camino Real/Boca Club Bridge over the Intracoastal Waterway in Boca Raton, was designated as "structurally deficient" by NBIS, but, by this writing, may have been removed from the list. Several county-owned and state-owned bridges have been targeted for replacement in the next 10 to 15 years.

Seaport

The Port of Palm Beach (POPB), located in Riviera Beach, is the fourth busiest container port in Florida and the eighteenth busiest in the continental U.S. It is a major nodal point for the shipment of bulk sugar, molasses, cement, utility fuels, water, produce and breakbulk items. The port handles over 3.3 million tons of cargo and over 240,000 containers per year. POPB is the only South Florida port operating its own rail system with pier-side services. The Florida East Coast Railway Company (FEC) services the docks and piers through the Port's industrial rail switching operations.

Vessels enter POPB through the Lake Worth Inlet. The channel is 300 feet wide and

accommodates vessels with operating drafts of 32 feet mean low water (MLW). The turning basin accommodates vessels of up to 700 feet in length with a safety margin. The Port has three slips, four marginal wharves and two roll on roll off ramps for a total of 5,200 linear feet of berthing space.

As an international port of entry, it poses significant security challenges. Port security is overseen by the United States Coast Guard who has jurisdiction over the port facility, vessels, and waterways, and by Customs and Border Protection who has jurisdiction over entry or exit or persons and cargo. Florida Department of Law Enforcement and the Riviera Beach Police Department enforce federal, state and local laws.

The Port maintains a comprehensive hurricane plan that ensures that a minimum of vessels remain in port, potential missile/debris material are removed, moored vessels remaining in port comply with requirements established by the Executive Director and COTP (Captain of the Port) Miami regulations, and that equipment, records and cargo are evacuated or relocated to high ground or best available storage locations.

A Foreign Trade Zone has been in operation at the Port since 1987.

Airports

Palm Beach International Airport (PBIA)

Palm Beach International Airport is located to serve the air trade of Palm Beach County and the four surrounding counties. The airport is located 2.5 miles west of downtown West Palm Beach. It is situated adjacent to Interstate Highway 95 and is easily accessible from anywhere in Palm Beach County.

It is one of the largest medium-hub airports in the U.S. PBIA serves both air carriers (airlines) and general aviation aircraft. The airport has a 24 hour control tower and a U.S. Customs & Immigration port of entry facility. It currently serves 20 air carriers to destinations throughout the U.S. and international flights to the Bahamas and Canada. The airport handles over 6.8 million passengers and approximately 19,000 tons of cargo per year. Commercial airlines, including commuter aircraft, fly in and out of the airport about 70,000 times a year. General aviation, freight and other flights average nearly 113,500 a year. PBIA was recently voted third best airport in the U.S. and sixth best in the world by the readers of the prestigious Conde Nast Traveler magazine.

In addition to PBIA, the County operates three general aviation only airports:

North County General Aviation Airport (F45)

The North County General Aviation Airport is located in the north portion of the county and provides easy access to the Florida Research Park, Jupiter, and Palm Beach Gardens. It is a designated reliever for PBI and serves both reciprocating engine and jet aircraft and has a maximum runway length of 4,300’ by 75’ wide and a maximum weight limit of 30,000 lbs.

Park Airport (LNA)

Park Airport (LNA), located in Lantana, is located 6 miles south of PBIA. LNA is a reliever airport focusing on the general aviation reciprocating engine and turbine driven aircraft. Jet aircraft are prohibited from operating at Park Airport. There is no air traffic control tower.

There are several flight schools located at the airport for both fixed wing and helicopters. This is a noise sensitive airport with residential communities surrounding the airport with heavy populations to the east, west, and south sides of the airport. LNA has a maximum runway length of 4,116' by 75' wide and a maximum weight limit of 12,500 lbs.

Glades Airport (PHK)

Glades Airport is the County's designated general aviation recreational and sport flying airport. The airport is also designated for parachute operations. The airport is located in the western portion of Palm Beach County and is located adjacent to Lake Okeechobee.

Boca Raton Airport (BCT)

Boca Raton Airport is a state-owned, public-use airport located two miles northwest of the central business district of Boca Raton adjacent to Interstate 95. It is designated as a general aviation transport facility, governed by a seven member Authority appointed by the City of Boca Raton and the Palm Beach County Commission.

Boca Raton Airport covers an area of 212 acres and has one asphalt paved runway which measures 6,276 x 150 ft. The airport has a control tower and can accommodate single-engine, multi-engine, jet and helicopter aircraft.

Rail Transportation Systems

Two railroad lines, often running within a half a mile (800m) of each other, provide a mix of passenger and freight services. Along the stretch of rails in Palm Beach County, both lines closely follow Interstate 95. The line to the east of I-95 is owned by the Florida East Coast (FEC) railroad, while the line to the west is run by CSX. North of West Palm Beach, the lines split with the FEC line following the coast north to Jacksonville, Florida, while the CSX line heads north toward Orlando.

The FEC is the biggest freight carrier along Florida's Atlantic coast. CSX is actually owned by the state of Florida, but is maintained and dispatched by CSX.

Long distance passenger carrier, Amtrak, and commuter carrier, Tri-Rail, dominate the rails during the day while the majority of CSX's freight traffic occurs at night. This may change as more and more of this line is double tracked.

Tri-Rail is South Florida's only regional transit system in South Florida. Begun on 1980, its 72-mile operation was originally conceived as a temporary means to maintain traffic during the

reconstruction and expansion of I-95. Today, Tri-Rail is viewed as an important permanent transportation feature of South Florida. Tri-Rail currently runs from West Palm Beach to Miami and has 18 stations. The rail line goes as far south as Miami Airport and as far north as Mangonia Park in Palm Beach County. Tri-Rail also operates shuttle bus services from many of its stations to areas surrounding the rail lines. There are 6 Tri-Rail stations within Palm Beach County.

Amtrak operates 22,000 miles of rail service to over 500 communities throughout 46 states. In Palm Beach County, Amtrak rail stations are located in Delray Beach and West Palm Beach.

Public Ground Transportation Services

Palm Tran, the county's primary intra-county public transportation service, currently operates 35 fixed bus routes. The majority of service is concentrated in the eastern portions of the County as far north as Jupiter and as far south as Boca Raton. One route travels to the western boundary of Palm Beach County where it connects with circulator routes that serve the communities of Belle Glade, Canal Point and South Bay. In addition to its directly operated service, Palm Tran also assists with the coordination of community based bus services in Boynton Beach, Lake Worth and Jupiter. Palm Tran currently averages over 35,000 passengers per day.

Palm Tran Connection is a shared ride, door to door, paratransit service that provides van transportation for disabled and senior-citizen residents and visitors in Palm Beach County under the following programs: the Americans with Disabilities Act (ADA) Program; the Division of Senior Services (DOSS) Program; and the Transportation Disadvantaged (TD) Program. It averages over 4,000 passengers each weekday.

Greyhound is the largest provider of intercity bus service outside the county, offering 18,000 daily departures to 2600 destinations nationwide. Greyhound terminals are located in Belle Glade, Delray Beach, Lake Worth and West Palm Beach.

There are numerous providers of privately owned charter, shuttle bus and taxi services available in Palm Beach County.

Water Supplies

Water is the essence that inextricably intertwines the environment, economy and quality of life in South Florida. Just as abundant water gives vitality to the region, a lack of water strains natural resources, stifles economic growth and disrupts daily routines. The management of South Florida's water resources is made extremely complex by Florida's subtropical climate of extreme wet and dry periods and by urban and infrastructure development. Rain tends to be scarcest when demand is highest, stressing water supplies. The South Florida Water Management District and the County's 22 water control districts bear the bulk of this water management responsibility.

Approximately 90 percent of the water used in homes and businesses comes from groundwater sources. The remaining 10 percent comes from surface waters. Nearly two-thirds of the County's freshwater is pumped from the state's vast underground aquifers. Of Florida's groundwater sources, the deep Floridan Aquifer, which spans the majority of the state, supplies

62 percent; the Biscayne Aquifer, located in portions of Palm Beach, provides 17 percent; the remaining 21 percent is supplied by surficial and intermediate unnamed aquifers. The state's remaining one third of freshwater is supplied from surface waters, including lakes and rivers.

With 40 percent of the state's population and a sizable agriculture industry, South Florida consumes more than half the state's daily total, 3.4 billion gallons. Agricultural irrigation accounts for 53 percent of overall water use, while public supply accounts for 37 percent. Power generation, industrial use, recreational irrigation and private water wells comprise the remaining 10 percent.

Local government and private water utilities treat and provide water to most homes and businesses. A much smaller number of people rely on individual wells as their source for drinking and/or irrigation water. Most water uses, such as water used for public water supply, industrial purposes and agricultural irrigation, are regulated by the regional water management district through Water Use Permits.

According to a recent U.S. Geological Survey water use report, South Florida residents average 179 gallons per person per day. The statewide average is 158 gallons. It is estimated that up to half of that goes to outdoor irrigation. More than 50 percent of the water typically applied to lawns is lost to evaporation or run-off due to overwatering.

By 2025, six million new residents are projected to make Florida their home, swelling the population to more than 24 million. More than half of the new residents will settle in South Florida. South Florida's demand for freshwater is projected to increase to 4.3 billion gallons per day, a 22 percent increase.

South Florida Water Management District works with other state agencies and local governments to protect current and future water supplies. Water conservation and use efficiencies are core elements of their water resource management strategy. To make sure the supply of water meets the needs of today's and tomorrow's residents and natural environments, the SFWMD regulates the withdrawal of ground and surface water throughout the region.

At the heart of the South Florida water system sits Lake Okeechobee – the largest natural water body in the southeastern United States. It serves as a source of public water supply for Okeechobee City (outside of Palm Beach County) and as a supplemental source of irrigation water in county for more than 700,000 acres in agricultural production. In addition, it serves as the emergency back-up water supply for more than five million residents in the region.

While heavy rainfall throughout the region benefits and recharges underground supplies, the ability to capture and store the rainwater for future use is extremely limited. When floods threaten, even during water shortage situations, the top priority is channeling the excess water away from homes and businesses as quickly as possible. To lower the levels in coastal canals to accommodate direct rainfall and stormwater runoff, freshwater often is released to the ocean.

Federal drinking water standards are enforced by two state agencies: the Department of Health and the Department of Environmental Protection. In Palm Beach County the authority for the regulation of public water supply systems has been delegated by these agencies to the Palm Beach County Health Department (PBCHD).

Water supply systems are regulated under the Safe Drinking Water Act if drinking water is provided to at least 25 persons or at least 15 service connections. These include the large water systems that provide service to municipal and incorporated areas as well as the small systems that may only serve a convenience store or day care center. PBCHD conducts a surveillance program to ensure that the systems are being operated in compliance with Federal, State, and local regulation.

Incidents of contamination are very rare because sanitary surveys, inspections, and sampling are routinely performed by PBCHD to verify that water treatment plants are in compliance with rules and regulations. Complaints relating to water quality are investigated on a regular basis and necessary enforcement actions are taken to ensure the safety of the water supply. Water wells that supply water to one or two residences (one of which may be a rental) are categorized as "private" systems and are not monitored routinely.

As more agricultural land is expected to be replaced with urban development, public use is expected to overtake farming as the largest use, consuming an anticipated 54 percent of the total. While agriculture is expected to be a smaller percentage of the overall future demand, it will still represent a significant slice of the water use pie and be a major economic force within the state. Regulations calling for better on-farm water use efficiencies will hopefully continue to produce positive results.

The demand for both urban and agricultural water uses are expected to increase significantly over the next 20 years. These water demands must be met without causing harm to the environment and water resources. Recent updates of the regional water supply plan concluded that regional water sources will not be sufficient to meet projected water demands through the 20 year period. The plan further concluded that with appropriate management and diversification of water supply sources, including water conservation, there is sufficient water to meet the water needs during a 1-in-10 drought condition through 2025.

Water reuse has become an integral part of overall efforts to manage water resources. It focuses on the reuse of reclaimed water for beneficial purposes such as: irrigation of yards, agriculture, golf courses, and other green space uses and for industrial uses such as cooling process water, ground water recharge, toilet flushing, dust control, and environmental restoration. Purposeful reuse will substantially reduce reliance on ground water, surface water and potable water for these uses. The SFWMD has developed a comprehensive approach to water reuse, including water supply planning, funding, regulation, outreach, and education. During the past 19 years, Florida has become recognized as a national leader in water reuse. In 2006, almost 229 million gallons per day of reclaimed water was reused in South Florida for many uses, including irrigation of 80,813 residential lots, 168 golf courses, 113 parks and 52 schools.

The Everglades Restoration initiative also promises many benefits. Major components of CERP (Comprehensive Everglades Restoration Plan) include surface water storage reservoirs; water preserve areas; management of Lake Okeechobee as an ecological resource; improved water deliveries to the St. Lucie and Caloosahatchee estuaries; underground water storage; treatment wetlands; improved water deliveries to the Everglades; removal of barriers to the natural sheetflow of water; storage of water in existing quarries; reuse of wastewater and improved water conservation.

Emergency Services

Principal elements of Palm Beach County's emergency services are its County and municipal emergency management offices, county and municipal fire rescue agencies, county and municipal law enforcement agencies and public and private ambulance services.

Palm Beach County Division of Emergency Management coordinates disaster planning, preparedness, response, recovery and mitigation activities for the County. The County's Emergency Operations Center is centrally located in West Palm Beach. The EOC houses about 150 personnel during activations, including the various multi-disciplinary support functions and the Executive Policy Group.

Each of the 38 municipalities has a designated emergency management contact and EOC location during disaster activations; a few of the larger municipalities have facilities specifically designed to support EOC personnel and activities. Because of its size, the County is divided into 6 Emergency Operating Areas (EOAs). The map on the next page shows the geographic coverage of each EOA.

Fire Rescue

Palm Beach County Fire-Rescue (PBCFR) is a combination career/volunteer fire department responsible for providing fire protection, emergency medical services, ALS transport, hazardous materials mitigation, special operations, aircraft firefighting, 9-1-1 dispatching, public education, fire inspections, fire investigations, and building plans review for unincorporated Palm Beach County and certain cities under contract. It serves a population of approximately 761,000, covers about 550 square miles of unincorporated County and numerous incorporated municipalities, and responds to nearly 100,000 fire and medial calls per year. Over three quarters of its calls are for medical emergencies. PBCFR's average response time is 6 minutes and 23 seconds.

PBCFR has a full complement of fire and medial rescue resources including: 1,372 career and 100 volunteer personnel, 45 stations, 41 engines, 2 special operations/hazmat teams, 43 ALS transport units, 2 Trauma Hawk helicopters, 1 rescue airboat, 4 ARFF crash trucks, 1 foam truck, 3 tenders, and 3 rescue pumpers.

Fire Rescue is accomplished through a combination of county and city agencies with support from the state and neighboring communities. Palm Beach County Fire rescue covers most of the county.

At this writing, PBCFR has contracts for specific services with the Glades Area, the municipalities of Belle Glade, Cloud Lake, Glen Ridge, Haverhill, Jupiter, Juno Beach, Lake Clarke Shores, Lake Park, Lantana, Manalapan, Pahokee, Royal Palm Beach, South Bay, South Palm Beach and Wellington. It also has 9-1-1 and dispatch services (only) provided to the cities of Lake Worth, North Palm Beach, Palm Beach Gardens, Palm Springs, Tequesta and West Palm Beach.

The following municipalities within Palm Beach County maintain independent firefighting resources that may be called upon for mutual aid support during times of disaster:

- Belle Glade Fire Rescue
- Boca Raton Fire Rescue
- Boynton Beach Fire Rescue
- Delray Beach Fire Rescue
- Greenacres Public Safety Department
- Lake Park Fire Rescue
- Lake Worth Fire Rescue
- North Palm Beach Public Safety Department
- Ocean Ridge Public Safety Department
- Pahokee Fire Rescue
- Palm Beach Fire Rescue
- Palm Beach Gardens Fire Rescue
- Palm Beach Shores Fire Rescue
- Palm Springs Public Safety Department
- Riviera Beach Fire Rescue
- South Bay Public Safety Department
- South Palm Beach Fire Rescue
- Tequesta Fire Rescue
- West Palm Beach Fire Rescue

Today, PBCFR does the majority of ambulance transport. Only two private ambulance providers (American Medical Response and Medics Ambulance Service) remain in operation in the County.

Trauma Hawk air ambulances are used primarily to transport trauma, cardiac and stroke patients meeting certain criteria. It is an especially valuable service in the isolated western communities of the County.

The map below shows the distribution of fire and police stations throughout the County.

County Law Enforcement

The Palm Beach County Sheriff's Office (PBSO) is the county's primary law enforcement agency. At this writing PBSO had a total staff of approximately 3,815, including 1,451 sworn law enforcement personnel, 708 sworn corrections personnel, 1656 support staff, and 4,300 volunteers.

In addition to serving the unincorporated areas of Palm Beach County, PBSO provides contractual services to several cities and, as needed, backup or specialized support services to several others. These services are summarized below.

- District 1 West Palm Beach (Support)
- District 2 Mangonia Park (Contract)
- District 3 Northlake (Support)
- District 4 Delray Beach (Support)
- District 5 West (Support) Unincorporated County
- District 6 Boynton Beach (Support)
- District 7 Boca Raton (Contract) Unincorporated Area

- District 8 Wellington (Contract)
- District 9 Royal Palm Beach (Contract)
- District 10 Lake Park (Contract)
- District 11 South Bay (Support)
- District 12 Pahokee (Support)
- District 13 Belle Glade (Support)
- District 14 Lake Worth (Contract)

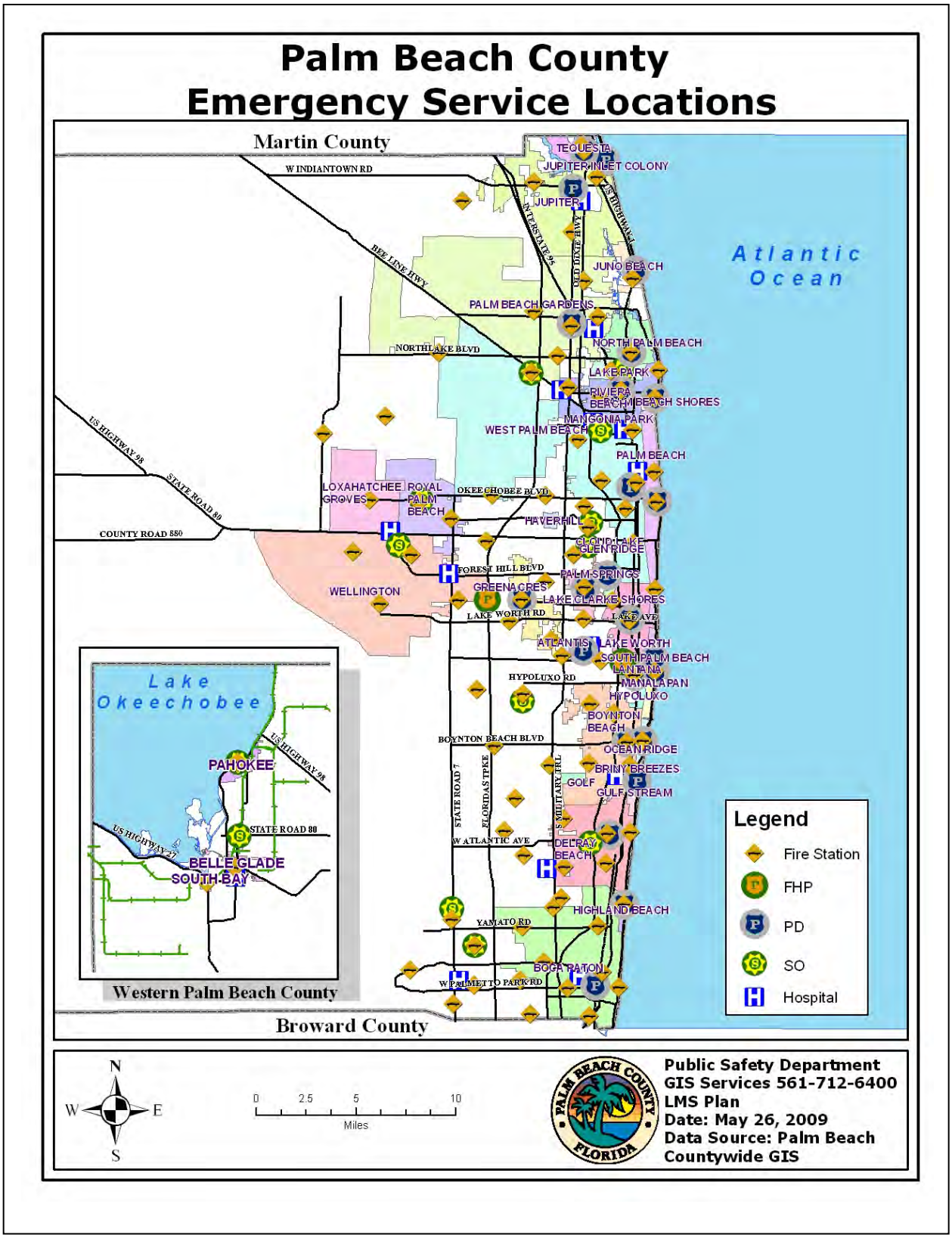
The following municipalities maintain their own police departments:

- Palm Beach Gardens
- Riviera Beach
- Tequesta
- Jupiter
- Juno Beach
- North Palm Beach
- Palm Beach Shores
- West Palm Beach
- Boynton Beach
- Delray Beach
- Boca Raton

Many of the smaller cities of the County call on PBSO on an “as needed” basis.

Other law enforcement agencies with a limited presence in Palm Beach County include the Florida Highway Patrol, Florida East Coast Railroad Police and the Florida Fish and Wildlife Conservation Commission Police.

The map below shows the distribution of emergency services countywide.


Palm Beach County
Emergency Service Locations
Martin County
W INDIANTOWN RD
BEE LINE HWY
TEQUESTA
JUPITER INLET COLONY
JUPITER
N INTERSTATE 95
OLD DIXIE HWY
S FEDERAL HWY
JUNO BEACH
PALM BEACH GARDENS
NORTH PALM BEACH
NORTHLAKE BLVD
LAKE PARK
RIVIERA BEACH
PALM BEACH SHORES
MANGONIA PARK
WEST PALM BEACH
PALM BEACH
US HIGHWAY 98
STATE ROAD 80
COUNTY ROAD 880
LOXAHATCHEE GROVES
ROYAL PALM BEACH
OKEECHOBEE BLVD
HAVERHILL
GLENDALE
GLEN RIDGE
FOREST HILL BLVD
PALM SPRINGS
WELLINGTON
GREENACRES
LAKE CLARKE SHORES
LAKE WORTH RD
LAKE AVE
ATLANTIS
LAKE WORTH
SOUTH PALM BEACH
LANTANA
HYPOLUXO RD
MANALAPAN
HYPOLUXO
BOYNTON BEACH
BOYNTON BEACH BLVD
OCEAN RIDGE
BRINY BREEZES
GOLF
GULF STREAM
STATE ROAD 7
FLORIDAS TPKE
S MILITARY TRL
W ATLANTIC AVE
DELRAY BEACH
HIGHLAND BEACH
YAMATO RD
BOCA RATON
W PALMETTO PARK RD
Atlantic Ocean
Lake Okeechobee
US HIGHWAY 98
PAHOKEE
STATE ROAD 80
US HIGHWAY 27
BELLE GLADE
SOUTH BAY
Western Palm Beach County
Broward County
Legend
Fire Station
FHP
PD
SO
Hospital
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S
0 2.5 5 10
Miles
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 26, 2009
Data Source: Palm Beach Countywide GIS

The Built Environment

Palm Beach County has seen significant changes in its built environment over the last 10 years, as a growing population has fueled major new construction and redevelopment. Three trends have been especially apparent. The first is the creation of pace-setting high density town centers, such as Mizner Park in Boca Raton and CityPlace in West Palm Beach, and Abacoa in Jupiter. The second trend is the rebirth of coastal urban communities through infill and redevelopment. Examples include West Palm Beach, Delray Beach and Lake Worth, as well as Boynton Beach, Riviera Beach, and Lake Park. The third trend is the continued western expansion of development in the exurban and rural communities such as Royal Palm Beach, Wellington, the 441 corridor, Loxahatchee, etc.

Redevelopment in the near coastal communities, building on the coastline, and expansion into wildland areas have implications for hurricane, surge and beach erosion and wildfire risks respectively.

The following section profiles the County' built environment as a basis for assessing its vulnerability to a range of hazards. The primary source of data for the profile was extracted from the Property Appraiser's Public Access database. It was the most accurate data source available, current as of January 2009. Data on the structural characteristics of single family residential homes came from "Exposure and Vulnerability Components of the Florida Public Hurricane Loss Projection Model published in 2005 by Florida International University, also using the Property Appraiser database.

Residential Units

Nearly 77 percent of the county's single family residential units are single story structures, 17 percent are multi-story, and 6.2 percent are manufactured homes. The residential housing stock is well distributed throughout the eastern county. Forty seven (47) percent of residential units reside in the unincorporated areas of the county. The seven municipalities of West Palm Beach, Boca Raton, Boynton Beach, Palm Beach Gardens, Jupiter, Wellington and Delray Beach collectively have about 35% of the county's residential units. The southern municipalities of Boca Raton, Delray Beach and Boynton Beach collectively have an estimated 46,348 residential units; the northern municipalities of Palm Beach Gardens and Jupiter have 25,622 units; West Palm Beach in central county has 20,377 units; and the communities of Wellington and Royal Palm Beach have 24,696 units. The western communities of Belle Glade, Pahokee and South Bay have approximately 4,850 total residential units. A breakdown of residential units by type by jurisdiction follows on the next page.

The overwhelming majority of residential structures (79%) are of CB Stucco construction. Thirteen and a half percent have exterior wall of wood in the form of wood siding, wood frame stucco or board batten. The balance are constructed of a variety of other materials. The County's database consists of approximately 25 categories, many of which have multiple variations. A breakdown of general types of construction are shown below.

Palm Beach County
Residential Structures by Jurisdiction

Source: Property Appraiser (PAPA)

Jurisdiction	Single Family / Single Story	Single Family / Multi-Story	Manufactured	Total
Unincorporated County	110,556	23,121	13,036	146,713
Atlantis	885	51	-	936
Belle Glade	1,921	36	842	2,799
Boca Raton	15,908	4,018	-	19,926
Boynton Beach	12,585	1,409	437	14,431
Briny Breezes	-	-	487	487
Cloud Lake	42	10	-	52
Delray Beach	9,976	1,753	262	11,991
Glen Ridge	74	17	-	91
Greenacres City	3,443	1,215	704	5,362
Gulf Stream	207	143	-	350
Haverhill	517	26	40	583
Highland Beach	72	162	-	234
Hypoluxo	80	17	64	161
Juno Beach	219	126	351	696
Jupiter	9,029	2,729	447	12,205
Jupiter Inlet Colony	156	82	-	238
Lake Clarke Shores	1,036	78	-	1,114
Lake Park	1,380	44	-	1,424
Lake Worth	7,146	553	690	8,389
Lantana	2,235	171	181	2,587
Loxahatchee Groves	988	123	58	1,169
Manalapan	87	106	-	193
Mangonia Park	206	7	-	213
Ocean Ridge	263	238	-	501
Pahokee	999	38	355	1,392
Palm Beach	1,074	1,605	-	2,679
Palm Beach Gardens	9,491	3,547	379	13,417
Palm Beach Shores	305	13	-	318
Riviera Beach	6,290	631	593	7,514
South Bay	570	3	84	657
Tequesta Village	1,415	163	-	1,578
South Palm Beach	2	2	-	4
Golf Village	150	14	-	164
North Palm Beach	2,179	318	-	2,497
Palm Springs	2,179	26	253	2,458
Royal Palm Beach	6,757	2,108	-	8,865
Wellington	11,230	4,596	5	15,831
West Palm Beach	16,523	3,713	141	20,377
			-	
Countywide	**238,175**	**53,012**	**19,409**	**310,596**

Structural Characteristics of County's Single Family Residential Buildings

Extensive research has been devoted to better understanding the most vulnerable types of structural components and connections to wind damage. The Palm Beach County building stock has been a major interest in these efforts. A 2005 study by Florida International University focuses on the roof system, roof to wall connections, wall systems, wall to foundation

connections, openings, and in the case of manufactured homes the anchors into the ground as areas requiring further understanding. Damage to structures occur when load effects from wind or flying debris are greater than the component's capacity to resist them. But vulnerabilities are much more complicated than failures of individual components. When a windstorm causes damage to a structure, it will usually cause different damage modes to different components at the same time. Understanding these combinations of vulnerabilities is extremely complex.

Nevertheless, certain structural designs and materials seem to be more vulnerable than others.

Roof Covering Materials

One portion of the resistance capacity of the roof system to wind uplift includes the ability of the shingles, tiles, or other roof covering to stay attached to the roof sheathing. The loss of covering, though not vital to the structural integrity of a structure, can contribute significantly to the damage of the contents of the structure and increase insurance losses. A second, more important aspect of the wind uplift resistance capacity of the roof system includes the ability of the sheathing to remain fastened to the trusses. The third subcomponent of the roof system, the trusses or rafters, is less important to the prediction of damage. Individual trusses or rafters will not fail in uplift before massive damage has already occurred from the loss of sheathing. The contribution of the trusses or rafters to the overall capacity of the building occurs in the resistance to the loss of the entire roof as a whole unit. Post disaster studies have found that the roof to wall connection is another vital characteristic of the overall resistance of the home to hurricane force winds.

Roof Types

Different roof types have different capacities to resist strong winds. The majority of roof types for single family houses in Palm Beach County are gable or hip. Gable roofs can be simply described as two pitched roof surfaces connected to vertical surfaces at each end. Hip roofs are gable roofs with gable ends brought together at the same pitch as the rest of the roof. Post disaster surveys have shown that gable roofs tended to suffer more structural damage than hip roofs.

Exterior Wall Materials

Exterior wall failures are much less commonly cited in post damage reports than roofing system failures. Residential structures in Palm Beach County are predominately of two types, concrete block and wood frame. Damage to masonry walls, especially reinforced concrete walls, is less prevalent than to wood frame walls. Both forms of wall materials are largely dependent on the integrity of the roof system for their survival.

Number of Stories

Obviously two story family buildings differ from single story structures in terms of structural characteristics, number of openings, value, etc. Most one-story buildings have either masonry exterior walls or timber frame, in other words one type of wall material. However, most second story buildings have mixed exterior wall material, typically concrete block walls for the first story and timber frame for the second story. For these reasons, it is assumed that everything else being equal, two story houses may be somewhat more susceptible to wind damage than single story houses.

Openings

The capacity of windows, doors, garage doors and other openings to wind pressure is the subject of great debate. The penetration of openings causes damage to homes in two ways. First, the penetrated opening allows rain and wind to enter the structure and damage the contents. Secondly, and most importantly to the structural integrity, openings allow wind to enter and create additional internal pressure which contributes to the uplift on the roof, causing failure.

Manufactured Homes

Andrew destroyed 97% of the manufactured homes in Dade County. Although manufacturing standards have improved in recent years they remain highly vulnerable to even minor hurricanes.
Tie-down systems are essential to improving survivability.

The table below profiles the Palm Beach County Housing Stock in terms of construction types and materials as estimated by Florida International University using Property Appraiser data.

Palm Beach County
Breakdown of Residential Structures by Construction Type & Building Materials

Component	Material	Percent
Single Family Residential		
Exterior Wall Material		
	Concrete Block/Stucco	79
	Wood Siding	9
	Wood Frame Stucco/Hollow	6
	Board & Batten	2
	Other	4
Roof Type		
1 Story Concrete Block	Gable	46
	Hip	23
1 Story Wood Frame	Gable	4
	Hip	2
2 Stories Concrete 1st Story	Gable	8
	Hip	4
2 Stories Wood Frame	Gable	1
	Hip	1
Unknown	Other	11
Roof Cover Material	Tile (Concrete)	26
	Tile (Clay/Bermuda)	34
	Shingle (Asphalt)	38
	Other	2
Manufactured Homes		

Exterior Wall Material	Vinyl/Aluminum	81
	Wood Siding	10
	Other	9
Roof Type	Gable/Hip	51
	Flat	47
	Other	2

Source : FIU; Property Appraisers Database (2005)

Palm Beach County
Number of Residential Structures by Exterior Wall Material

Construction Type	No. Structures	% Structures
Concrete Block/ Stucco	190,488	79.2
Wood Siding	16,064	6.7
Wood Frame Stucco	11,609	4.8
Board Batten & Other Wood	5,012	2.1
Vinyl/Alum Siding	7,733	3.2
Precast PNL/Reinforced Concrete	1,955	.8
Concrete Block	1,569	.6
Brick	1,951	.8
Prefab Metal/PNL	131	.1
Other	4,097	1.7

Source: Property Appraiser (PAPA)

Age Distribution of Single Family Units

About 1.1% (7,610) of the residential stock was built before 1929; 7.6% (51,153 units) was built between 1929 and 1959; 58.2% (390,819) between 1960 and 1989; and 33.0% (221,470) between 1990 and 2008. Over 75% of residential units were built before “post Andrew” building codes were put into effect. West Palm Beach and Lake Worth have the giant share of oldest residential units in the county. Unincorporated Palm Beach County has substantial pre-1960 and pre-code units, 9,784 units and 180,295 units respectively. Not surprisingly, West Palm Beach, Wellington, Palm Beach Gardens, Jupiter, and Boynton Beach have the largest post code stocks of residential units. The table on the next page provides a detailed breakdown of residential units by year built groupings by jurisdiction.

Palm Beach County
Residential Units by Year Built by Jurisdiction

Source: Property Appraiser (PAPA)

Jurisdiction	Before 1929	1929-1959	1960-1989	1990-2008		Before 6/1970	Before 6/1994
Unincorporated County	112	9,672	170,511	99,529		23,929	209,061
Atlantis	-	-	1,060	160		311	1,094
Belle Glade	1	1,670	3,079	1,476		3,216	5,501
Boca Raton	55	2,155	35,389	9,173		12,139	41,448
Boynton Beach	38	3,022	22,958	11,045		7,828	28,627
Briny Breezes	-	10	399	78		204	441
Cloud Lake	-	51	9	6		53	62
Delray Beach	302	3,950	21,962	8,844		7,610	28,441
Glen Ridge	-	55	36	8		71	94
Greenacres City	58	240	10,754	5,874		911	12,209
Gulf Stream	11	102	362	70		235	491
Haverhill	-	118	372	134		294	514
Highland Beach	-	85	3,309	856		477	3,499
Hypoluxo	3	87	694	1,290		115	1,138
Juno Beach	-	88	2,067	1,098		350	2,383
Jupiter	21	549	16,036	10,724		1,392	18,954
Jupiter Inlet Colony	-	67	121	49		129	197
Lake Clarke Shores	1	371	912	187		747	1,451
Lake Park	63	996	2,421	426		2,374	3,496
Lake Worth	1,585	7,148	7,956	949		11,949	16,968
Lantana	17	1,618	2,752	1,126		2,548	4,543
Loxahatchee Groves	2	37	748	333		113	885
Manalapan	1	10	209	362		43	527
Mangonia Park	9	85	367	293		137	461
Ocean Ridge	4	234	1,120	192		881	1,401
Pahokee	7	603	1,065	342		1,123	1,794
Palm Beach	1,009	1,308	6,632	1,575		4,660	9,403
Palm Beach Gardens	5	15	12,446	16,062		2,776	17,328
Palm Beach Shores	1	590	686	26		941	1,280
Riviera Beach	44	3,456	10,181	5,255		6,890	14,001
South Bay	1	126	1,066	154		459	1,277
Tequesta Village	-	78	2,265	1,086		1,253	2,391
South Palm Beach	-	67	1,825	25		407	1,892
Golf Village	-	17	107	42		68	131
North Palm Beach	1	857	6,029	887		3,292	6,906
Palm Springs	3	1,423	6,035	905		2,553	7,500
Royal Palm Beach	-	4	6,535	6,423		468	7,292
Wellington	-	7	8,628	13,427		27	11,056
West Palm Beach	4,256	10,182	21,716	20,979		18,966	38,261
	-	-					
Countywide	**7,610**	**51,153**	**390,819**	**221,470**		**121,939**	**504,398**

Palm Beach County
Condos, Town Houses, Co-Ops, Commercial Condos, Single-Family Residence Condos, Zero Lot Line (Units)

Jurisdiction	Condo	Condo. Commercial	Co-Op	Townhouse	SFR-C	Zero Lot Line
Unincorporated County	78,708	962	0	25,066	629	37,621
Atlantis	239	33	0	43	0	10
Belle Glade	0	0	0	0	0	0
Boca Raton	15,099	1,207	98	2,511	0	2,459
Boynton Beach	11,798	352	233	3,754	0	3,119
Briny Breezes	0	0	0	0	0	0
Cloud Lake	0	0	0	0	0	0
Delray Beach	13,060	451	324	3,084	0	1,256
Glen Ridge	0	0	0	0	0	0
Greenacres City	5,324	18	0	3,060	0	2,488
Gulf Stream	126	0	63	6	0	0
Haverhill	0	0	0	0	0	44
Highland Beach	3,668	0	57	85	0	16
Hypoluxo	1,376	0	0	532	0	70
Juno Beach	1,868	46	0	256	0	0
Jupiter	7,234	895	0	5,192	0	2,949
Jupiter Inlet Colony	0	0	0	0	0	0
Lake Clarke Shores	35	19	0	279	0	0
Lake Park	805	176	0	23	0	0
Lake Worth	2,542	136	92	215	0	0
Lantana	1,217	85	62	91	0	0
Loxahatchee Groves	0	0	0	0	0	0
Manalapan	16	0	86	0	0	0
Mangonia Park	239	9	0	0	0	0
Ocean Ridge	469	0	308	96	0	0
Pahokee	21	0	0	0	0	0
Palm Beach	5,319	217	1074	48	0	0
Palm Beach Gardens	4,012	275	0	5,972	200	5,375
Palm Beach Shores	412	1	104	6	0	0
Riviera Beach	4,162	206	88	1,967	0	962
South Bay	0	0	0	0	0	0
Tequesta Village	1,286	55	0	288	0	0
South Palm Beach	1,652	1	186	15	0	0
Golf Village	0	0	0	303	0	0
North Palm Beach	4,026	140	247	133	0	0
Palm Springs	2,148	97	0	1,733	0	39
Royal Palm Beach	1,926	167	0	1,633	0	2,360
Wellington	1,339	108	0	2,026	539	3,670
West Palm Beach	13,850	642	137	4,109	101	5,016
Countywide	**184,005**	**6,284**	**3,173**	**62,247**	**1,472**	**67,469**

Source: Property Appraiser (PAPA)

Non-Residential Building Stock

The tables on the next two pages provide a breakdown of commercial, industrial, government, educational, healthcare, religious and other non-residential structures by jurisdiction and by age category. Eighty one percent were built since 1960, but 82% predate current codes.

Palm Beach County
Non-Residential Building Stock by Use by Jurisdiction

Jurisdiction	Commercial	Industrial	Government	Education	Healthcare	Other
Unincorporated County	3,142	2,245	413	-	-	-
Atlantis	22	7	-	-	-	7
Belle Glade	378	194	86	-	-	33
Boca Raton	1,170	427	130	-	-	257
Boynton Beach	630	343	80	-	8	146
Briny Breezes	-	6	-	-	3	9
Cloud Lake	3	1	-	-	-	-
Delray Beach	1,112	400	126	94	2	144
Glen Ridge	6	-	-	-	7	-
Greenacres City	154	43	15	38	-	54
Gulf Stream	-	9	9	-	-	4
Haverhill	23	1	11	-	3	2
Highland Beach	5	3	1	-	-	10
Hypoluxo	42	16	-	-	-	8
Juno Beach	53	21	1	-	-	15
Jupiter	446	323	36	63	-	139
Jupiter Inlet Colony	1	-	-	-	-	1
Lake Clarke Shores	24	-	6	-	-	1
Lake Park	239	145	22	8		13
Lake Worth	684	301	85	38	1	37
Lantana	200	94	13	13	8	15
Loxahatchee Groves	11	25	5	3	3	66
Manalapan	6	1				
Mangonia Park	48	130	5	2	2	7
Ocean Ridge	3	5			7	9
Pahokee	103	61	40	45	-	14
Palm Beach	247	26	18	9	-	30
Palm Beach Gardens	362	130	49	55	3	109
Palm Beach Shores	18	2	-	-	-	5
Riviera Beach	501	516	72	76	-	70
South Bay	61	51	14	14	-	7
Tequesta Village	97	17	15	-	-	11
South Palm Beach	1	-	-	-	-	1
Golf Village	9	7	-	-	-	4
North Palm Beach	173	14	41	7	-	27
Palm Springs	214	34	43	50	1	20
Royal Palm Beach	255	83	18	13	-	54
Wellington	159	107	18	37	3	601
West Palm Beach	1,889	971	224	169	32	216
Countywide	12,491	6,759	1,596	1,443	64	2,146

Source: Property Appraiser (PAPA)

Palm Beach County

Non-Residential Units by Year Built Groupings by Jurisdiction

Jurisdiction	Before 1929	1929-1959	1960-1989	1990-2008		Before 6/1970	Before 6/1994
Unincorporated County	11	915	5,184	2,170		2,035	6,766
Atlantis	-	-	24	16		8	28
Belle Glade	6	265	410	103		470	720
Boca Raton	16	155	1,433	534		570	1,746
Boynton Beach	16	208	685	372		402	1,013
Briny Breezes	-	-	22	1		22	23
Cloud Lake	-	4	-	-		4	4
Delray Beach	71	490	974	359		849	1,646
Glen Ridge	-	2	4	-		3	6
Greenacres City	1	23	212	77		59	259
Gulf Stream	2	1	18	4		8	23
Haverhill	-	4	18	17		13	23
Highland Beach	-	1	16	6		9	17
Hypoluxo	2	9	51	5		13	63
Juno Beach	2	6	52	31		20	68
Jupiter	10	54	601	347		174	752
Jupiter Inlet Colony	-	-	1	1		-	2
Lake Clarke Shores	-	1	28	2		7	29
Lake Park	10	31	335	55		198	388
Lake Worth	68	433	548	105		704	1,087
Lantana	7	87	204	45		177	315
Loxahatchee Groves	-	1	68	41		6	70
Manalapan	-	2	6	1		2	9
Mangonia Park	-	3	136	54		23	159
Ocean Ridge	-	2	16	1		8	18
Pahokee	4	101	141	23		186	251
Palm Beach	82	114	105	34		222	317
Palm Beach Gardens	-	1	398	311		102	488
Palm Beach Shores	-	16	6	3		19	22
Riviera Beach	6	267	720	253		546	1,055
South Bay	-	30	100	32		68	140
Tequesta Village	-	8	105	30		47	121
South Palm Beach	-	-	3	-		1	3
Golf Village	-	5	13	3		6	18
North Palm Beach	-	18	211	34		104	236
Palm Springs	-	95	218	52		166	327
Royal Palm Beach	-	7	162	260		18	220
Wellington	-	5	335	591		18	438
West Palm Beach	241	1,153	1,547	594		1,936	3,125
Countywide	**555**	**4,517**	**15,110**	**6,567**		**9,223**	**21,995**

Source: Property Appraiser (PAPA)

Average Age and Value of Structures

The table below depicts the average age and value of structures in each jurisdiction.

Palm Beach County
Average Value & Age by Jurisdiction (All Structures)

Jurisdiction	Avg. Value	Avg. Year Built	Average Age
Unincorporated County	$178,598	1985	23
Atlantis	$239,998	1978	30
Belle Glade	$116,297	1969	39
Boca Raton	$352,687	1979	29
Boynton Beach	$161,181	1981	27
Briny Breezes	$15,426	1975	33
Cloud Lake	$79,538	1955	53
Delray Beach	$214,955	1978	30
Glen Ridge	$123,812	1962	46
Greenacres City	$151,313	1986	22
Gulf Stream	$627,879	1971	37
Haverhill	$124,592	1975	33
Highland Beach	$493,047	1982	26
Hypoluxo	$195,424	1991	17
Juno Beach	$378,949	1985	23
Jupiter	$255,444	1988	20
Jupiter Inlet Colony	$383,369	1973	35
Lake Clarke Shores	$169,454	1972	36
Lake Park	$151,023	1968	40
Lake Worth	$115,513	1960	48
Lantana	$158,181	1973	35
Loxahatchee Groves	$122,309	1983	25
Manalapan	$1,339,204	1981	27
Mangonia Park	$163,086	1973	35
Ocean Ridge	$396,280	1974	34
Pahokee	$90,445	1965	43
Palm Beach	$735,800	1967	41
Palm Beach Gardens	$300,559	1989	19
Palm Beach Shores	$515,615	1967	41
Riviera Beach	$211,140	1977	31
South Bay	$133,317	1972	36
Tequesta Village	$234,898	1980	28
South Palm Beach	$246,941	1975	33
Golf Village	$318,134	1977	31
North Palm Beach	$211,591	1973	35
Palm Springs	$127,800	1975	33
Royal Palm Beach	$186,768	1991	17
Wellington	$266,001	1993	15
West Palm Beach	$223,133	1975	33
Countywide	**$218,355**	**1982**	**26**

Source: Property Appraiser (PAPA)

Number of Addresses in Special Flood Hazard Areas

A total of 109,151 addresses in 24 municipalities and unincorporated Palm Beach County are located with Special Flood Hazard Areas (A Zones). These addresses are widely scattered throughout the County.

Palm Beach County
Number of Addresses in Special Flood Hazard Areas

Jurisdiction	No. Addresses
Atlantis	222
Boca Raton	9,181
Boynton Beach	11,872
Cloud Lake	14
Delray Beach	9,567
Gulf Stream	217
Haverhill	503
Highland Beach	2,417
Juno Beach	222
Jupiter	7,056
Lake Park	931
Lake Worth	1,392
Lantana	1,416
Manalapan	248
Mangonia Park	35
North Palm Beach	3,173
Ocean Ridge	1,231
Palm Beach	4,766
Palm Beach Gardens	1,400
Palm Springs	2,690
Riviera Beach	3,960
South Palm Beach	1,225
Tequesta	432
West Palm Beach	11,997
Unincorporated PBC	48,760
Countywide Total	**157,669**

Source: FEMA Digitized FIRMS 1996

Repetitive Flood Loss Properties

Although a significant portion of the county falls within FEMA designated Special Flood Hazard Areas, flooding can and does occur anywhere in the county. Because of elevated slabs and effective drainage systems, structural flooding is not widespread. Nevertheless, the county has 279 structures listed by FEMA as repetitive flood loss properties. These are properties that have had three or more “insured” flood losses of more than $1000 during a running 10 year period since 1978. At this writing, 24 of the county’s 38 municipalities and the unincorporated county have at least one repetitive flood loss property on the books. Undoubtedly there are additional properties that flood regularly but technically do not qualify under FEMA’s guidelines. The table below summarizes the number of listed by the Insurance Services Office as repetitive flood loss properties within Community Rating System communities as of the end of 2008. The Town of Palm Beach County and the unincorporated area of the county have by far the highest incidence of repetitively flooded properties, 77 and 70 respectively (52.7% of the county total). West Palm Beach, Delray Beach, Ocean Ridge and Boynton Beach have significant numbers

as well. Surprisingly, Jupiter and Boca Raton which the Flood Insurance Rate Maps, show has having significant special flood hazard areas only have 7 and 3 repetitive flood loss properties respectively. As of June 2006 there were 3 Severe Repetitive Loss Properties in the county. These are properties that had at least four NFIP claim payments (including building and contents) over $5,000 each, and the cumulative amount of such claims payments exceeds $20,000; or at least two separate claims payments (building payments only) have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building, occurring within any ten-year period, but greater than 10 days apart. All three properties in Palm Beach County are in the Town of Palm Beach.

Palm Beach County
Number of Repetitive Flood Loss Properties in CRS Communities

Jurisdiction	No. Repetitive Loss Properties
Unincorporated County	70
City of Atlantis	1
City of Boca Raton	3
City of Boynton Beach	12
Town of Cloud Lake	1
City of Delray Beach	15
Town of Gulf Stream	2
Town of Haverhill	1
Town of Highland Beach	1
Town of Juno Beach	3
Town of Jupiter	7
Town of Lake Park	2
City of Lake Worth	9
Town of Lantana	6
Town of Manalapan	2
Town of Mangonia Park	1
Village of N. Palm Beach	3
Town of Ocean Ridge	15
City of Pahokee	1
City Palm Bch. Gardens	7
Town of Palm Beach	77
Village of Palm Springs	1
City of Riviera Beach	10
Town of S. Palm Beach	1
Village of Tequesta	2
City of West Palm Beach	27
Countywide Total	**279**

Source: FEMA

Repetitive loss properties in Palm Beach County breakdown by the following uses: single family (68.4%), 2-4 family units (7.0%), other residential (10.2%), condominium (2.5%), and non-residential (11.9%).

As of November 30, 2008, there were 166,719 National Flood Insurance policies in force countywide with annual premiums totaling $55,446,224 annually. This figure includes premium discounts earned by the County and communities participating in the Community Rating System.

Palm Beach County
National Flood Insurance Program Policies & Premiums by Jurisdiction
(As of 11/30/2008)

Jurisdiction	No. NFIP Policies In-Force	$ Written Premiums In-Force
Unincorporated County	75,532	24,814,603
Atlantis	371	113,354
Belle Glade	249	94,974
Boca Raton	15,140	4,891,367
Boynton Beach	9,933	3,074,775
Briny Breezes	117	75,286
Cloud Lake	11	5,098
Delray Beach	8,440	3,443,869
Glen Ridge	23	9,491
Golf	20	7,423
Greenacres City	415	133,616
Gulf Stream	358	272,252
Haverhill	26	8,093
Highland Beach	4,099	714,117
Hypoluxo	1,095	287,294
Juno Beach	1,755	409,563
Jupiter	8,854	2,533,124
Jupiter Inlet Colony	128	54,407
Lake Clarke Shores	271	114,562
Lake Park	920	241,587
Lake Worth	1,841	883,280
Lantana	1,164	557,739
Loxahatchee Groves	Included in PB County	Included in PB County
Manalapan	242	208,329
Mangonia Park	52	53,079
North Palm Beach	4,093	938,031
Ocean Ridge	1,288	619,640
Pahokee	113	51,023
Palm Beach	7,591	3,833,857
Palm Beach Gardens	3,887	1,451,676
Palm Beach Shores	973	276,227
Palm Springs	1,516	336,139
Riviera Beach	5,801	1,583,242
Royal Palm Beach	813	246,139
South Bay	45	16,010
South Palm Beach	1,430	306,024
Tequesta	1,362	417,361
Wellington	362	170,971
West Palm Beach	7,269	2,198,602
Countywide	**166,719**	**55,446,224**

Source: NFIP

COASTAL HIGH HAZARD AREAS

In May 2002, the Florida Legislature amended Section 163.3191(2)(m) Florida Statutes (F.S.) to require the following:

"If any of the jurisdiction of the local government is located within the coastal high-hazard area,

an evaluation of whether any past reduction in land use density impairs the property rights of current residents when redevelopment occurs, including, but not limited to, redevelopment following a natural disaster. The property rights of current residents shall be balanced with public safety considerations. The local government must identify strategies to address redevelopment feasibility and the property rights of affected residents. These strategies may include the authorization of redevelopment up to the actual built density in existence on the property prior to the natural disaster or redevelopment."

The State of Florida defines Coastal High Hazard Areas (CHHA) in Chapter 163.3178(2)(h) as: "the evacuation zone for a category one hurricane as established in the regional hurricane evacuation study applicable to the local government".

Since 2003, Palm Beach County has maintained a more stringent definition which includes evacuation zones for hurricane categories one and two.

Most of the unincorporated CHHA lands are located in the northern section of Palm Beach County. The land uses for these lands are low residential, medium residential, high residential, commercial, parks, conservation, institutional, and industrial. A small segment of the CHHA lands are located in the southern area of the County near the municipalities of Briny Breezes and Gulf Stream. These land uses are medium residential, high residential, commercial, and park. The majority the CHHA land is located within 23 municipal boundaries and is therefore not addressed.

Below is a table listing the existing land uses and total acres in the unincorporated areas of Palm Beach County's Coastal High Hazard Area.

Unincorporated Palm Beach County
Existing Land Use Total Acres

Land Use	Total Acres
Agriculture	2.85
Commercial	11954.87
Conservation	4868.28
Industrial	245.28
Institutional	1688.74
Mixed Use	22.26
Recreation/Open Space	2154.22
Residential Mobile Home	272.47
Residential Multi-Family	7373.17
Residential Single Family	14688.51
Utility/Transportation	121.55
Vacant	6677.30

Source: Palm Beach County Planning, Zoning, Building

Number of Addresses in the Coastal High Hazard Area

Countywide there are over 48,000 addresses located within the Coastal High hazard Area. The highest concentration of addresses are located in the northern and southern municipalities of the county near the Jupiter and Boca inlets. The database does not permit a breakout by units.

Palm Beach County
Number of Addresses in the Coastal High Hazard Area

Jurisdiction	No. Addresses
Boca Raton	4,395
Boynton Beach	4,095
Briny Breezes	348
Delray Beach	3,088
Gulf Stream	160
Highland Beach	2,315
Hypoluxo	1,353
Juno Beach	1,023
Jupiter	6,632
Jupiter Inlet Colony	81
Lake Park	662
Lake Worth	616
Lantana	1,247
Manalapan	264
North Palm Beach	5,181
Ocean Ridge	1,064
Palm Beach	3,914
Palm Beach Gardens	455
Palm Beach Shores	264
Riviera Beach	2,695
South Palm Beach	1,148
Tequesta	855
West Palm Beach	2,403
Unincorporated County	3,862
Total	**48,024**

Source: Property Appraiser (PAPA)

Critical Facilities by Jurisdiction

Palm Beach County defines critical facilities as including essential government facilities, fire and police facilities, hospital and health care facilities, nursing homes and assisted living facilities, schools and shelter facilities, airports, water treatment plants, water control district facilities, and waste water treatment facilities. The chart below shows a breakdown in the number of facilities by jurisdiction.

Palm Beach County
Critical Facilities by Jurisdiction

Jurisdiction	No. Critical Facilities
Unincorporated County	106
Atlantis	4
Belle Glade	6
Boca Raton	24
Boynton Beach	23
Delray Beach	18
Greenacres	6
Gulf Stream	1
Highland Beach	2
Juno Beach	3
Jupiter	14
Jupiter Inlet Colony	1
Lake Clark Shores	1
Lake Park	3
Lake Worth	12
Lantana	5
Manalapan	2
Mangonia Park	1
North Palm Beach	2
Ocean Ridge	2
Pahokee	3
Palm Beach	4
Palm Beach Gardens	17
Palm Beach Shores	2
Palm Springs	2
Riviera Beach	7
Royal Palm Beach	7
South Bay	1
South Palm Beach	1
Tequesta	6
Wellington	9
West Palm Beach	58
Countywide	**353**

Source: Property Appraiser (PAPA)

Addresses in Wildland-Urban Interface Areas

The table below summarizes the number of addresses situated in the wildland-urban interface areas of the county potentially at risk from wildfires.

Palm Beach County
Addresses in Wildland-Urban Interface Areas

Jurisdiction	Acres
Unincorporated County	22,158
Wellington	24,379
Loxahatchee Groves	1,307
Total	**47,844**

Source: Florida Department of Forestry, PBC Division of Emergency Management

Palm Beach County Building Codes & Practices

The building departments of the county and its municipalities continuously seek improved standards and measures for protecting public safety, health and welfare by ensuring that all construction within their jurisdictions conforms with applicable building codes, ordinances, laws, rules, resolutions and regulations. Their collective mission is to enact and enforce effective codes and standards to ensure the structural strength, sanitation, fire protection, adequate light and ventilation, and other essential elements of life safety in the built environment, including the creation of a more disaster resilient community.

The Florida Building Code is the core element of Palm Beach County's building code system. The single statewide unified code is administered and enforced by local jurisdictions. In accordance with local needs and circumstances, and as authorized by law, code requirements, in some instances, have been amended by officials to be more stringent. Palm Beach County's codes are among the most rigorous in the U.S. in terms of disaster protection.

The provisions of the county's local building codes apply to the construction, erection, alteration, modification, repair, equipment, use and occupancy, location, maintenance, removal and demolition of every public and private building, structure or facility or floating residential structure, and any appurtenances connected or attached to such buildings, structures or facilities.

The County has an active Building Code Advisory Board with the mission of making recommendations to the Board of County Commissioners and local governments on ways to enhance building-related codes and standards and, as it makes sense, promote uniformity in standards.

The Building Officials Association of Palm Beach County (BOAPBC), a non-profit organization comprised of code professionals including Building Officials, Inspectors, Plans Examiners,

Architects, Engineers, Contractors, Industry Members, and others mutually interested in the promotion and enhancement of public safety, is also active in promoting the diligent and consistent enforcement of applicable construction codes and regulations throughout Palm Beach County.

In 2004 The County's Building Department and the Division of Emergency Management collaborated on enhancing the county's Flood Damage Prevention Ordinance to better regulate building construction in geographic areas identified by the county and FEMA as especially susceptible to flooding. The comprehensive, updated Ordinance followed and was compliant with the FEMA model. Important enhancements to the ordinance included the establishment of more stringent standards on minimum floor elevations relative to adjacent road elevations and minimizing displacement of flood volumes to neighboring properties by limiting the amount of imported earth fill that can be brought onto lots.

Concluding Comments on the Built Environment

More detailed discussion s of structural vulnerabilities to the expanded list of hazards will be included in the enhanced hazard-specific risk and vulnerability write-ups planned for future editions of this plan.

As the county has not experienced widespread residential or commercial flooding, mitigation projects will be focused primarily on repetitive and severely repetitive flood loss properties. Drainage improvement projects will also be an emphasis in flood prone areas. Development in the Coastal High Areas of the county will be discouraged through active enforcement of codes and ordinances.

Buildings constructed to current building codes have performed well in recent severe wind events. Failure of roof coverings has been a common problem, leading to top down water damage and some mold situations. Wind retrofit of older and poorly constructed structures will continue to be encouraged, however a substantial segment of the county's inventory of residential and commercial structures remain at risk from extreme wind events.

Development in the wildland-urban interface areas will be closely managed and wildfire protection measures will be aggressively promoted.

Special Appendix III: NFIP & CRS Status & Activities

This appendix is intended to provide current data and information on NFIP and CRS status and activities countywide in fulfillment of the following FEMA requirement:

Requirement: §201. 6(c)(3)(ii): The mitigation strategy must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

The tables on the following pages provide summaries of NFIP and CRS status and activities by jurisdiction. A variety of FEMA, ISO and local resources were used to prepare the summary tables.

Detailed summaries of CRS activities, class ratings and insurance savings are included. The number and value of NFIP insurance policies in effect, claims activity, and savings realized from CRS participation are also included on a jurisdiction be jurisdiction basis. Currently the CRS program is generating close to $5 million in insurance premium savings countywide.

At this writing, a special survey was being conducted to compile updated information from CRS and non-CRS communities on NFIP status and activities, including "higher standards" activities. Results are not yet available. The questionnaire, keys of activities, and final summary matrices are included to demonstrate how this information is being compiled.

Federal Emergency Management Agency
Community Status Book Report
Palm Beach County Communities
(August 2009)

Communities Participating in the National Flood Insurance Program

Community ID#	Community Name	County	Initial Flood Haz Boundary Map Identified	Initial FIRM Identified	Current Effective Map Date	Regular - Emergency Program Entry Date	Tribal
120192	Palm Beach County	Palm Beach		6/19/70	6/2/92	2/1/79	No
120193	City of Atlantis	Palm Beach	12/06/74	11/01/78	11/01/78	11/01/78	No
120194	City of Belle Glade	Palm Beach	7/19/74	5/15/78	9/30/82	5/15/78	No
120196	City of Boynton Beach	Palm Beach	3/8/74	1/3/79	9/30/82	1/3/79	No
120197	Town of Briny Breezes	Palm Beach	1/23/74	5/15/78	9/30/82	5/15/78	No
120198	Town of Cloud Lake	Palm Beach	12/6/74	5/15/78	5/15/78	5/15/78	No
125102	City of Delray Beach	Palm Beach		4/9/71	1/5/89	4/9/71	No
120200	Town of Glen Ridge	Palm Beach	12/6/74	5/15/78	5/15/78	5/15/78	No
120201	Village of Golf	Palm Beach	8/30/74		(NSFHA)	8/26/77	No
120203	City of Greenacres	Palm Beach	1/9/74		(NSFHA)	8/26/77	No
1251090	Town of Gulf Stream	Palm Beach	11/25/72	11/24/72	9/30/82	11/24/72	No
120205	Town of Haverhill	Palm Beach	6/28/74		(NSFHA)	8/26/77	No
125111	Town of Highland Beach	Palm Beach	10/17/70	10/16/70	9/30/82	10/16/70	No
120207	Town of Hypoluxo	Palm Beach	8/23/74	5/15/78	5/15/78	5/15/78	No
125120	Town of Jupiter Inlet Colony	Palm Beach	9/27/72	9/22/72	9/30/82	9/22/72	No
125119	Town of Jupiter	Palm Beach		9/22/72	6/2/92	9/22/72	No
120211	Town of Lake Clarke Shores	Palm Beach	1/9/74	11/01/78	11/1/78	11/1/78	No
120212	Town of Lake Park	Palm Beach	11/23/73	9/15/78	9/15/78	9/15/78	No
120214	Town of Lantana	Palm Beach	3/12/71	3/12/71	10/15/82	3/12/71	No

120192	Town of Loxahatchee Groves	Palm Beach	Recently Incorporated: Still included in Palm Beach County				
120215	Town of Manalapan	Palm Beach		8/18/70	9/30/82	10/30/70	No
120216	Town of Mangonia Park	Palm Beach	1/16/74	3/1/78	3/1/78	3/1/78	No
120217	Village of North Palm Beach	Palm Beach	12/6/74	8/15/78	6/2/92	8/15/78	No
125134	Town of Ocean Ridge	Palm Beach	9/18/70	4/9/71	9/30/82	4/9/71	No
120219	City of Pahokee	Palm Beach	9/5/75	5/15/78	10/15/82	5/15/78	No
120221	City of Palm Beach Gardens	Palm Beach	1/18/74	1/3/79	1/6/88	1/3/79	No
125137	Town of Palm Beach Shores	Palm Beach	4/27/70	6/25/71	9/30/82	6/25/81	No
120220	Town of Palm Beach	Palm Beach	9/13/74	5/15/78	9/30/82	5/15/78	No
120223	Village of Palm Springs	Palm Beach	3/15/74	3/1/78	12/22/98	3/1/78	No
125142	City of Riviera Beach	Palm Beach		9/27/72	9/30/82	9/22/72	No
120225	Village of Royal Palm Beach	Palm Beach	6/28/74		(NSFHA)	8/26/77	No
120226	City of South Bay	Palm Beach	7/19/74		(NSFHA)	8/26/77	No
120227	Town of South Palm Beach	Palm Beach	1/16/74	5/15/78	9/30/82	5/15/78	No
120226	Village of Tequesta	Palm Beach	6/18/71	6/11/71	9/30/82	6/11/71	No
125157	Village of Wellington (Use Palm Beach county CID 120192) Firm dated 6/2/92, panel number 100B	Palm Beach		6/2/92	01/01/50	1/3/01	No
120229	City of West Palm Beach	Palm Beach	10/31/75	3/1/79	3/1/79	3/1/79	No

Source: http://www.fema.gov/fema/csb.shtm

Palm Beach County
National Flood Insurance Community Profile

JURISDICTION	CID	REGULAR ENTRY	POLICIES IN FORCE	INSURANCE IN FORCE	NO. PD LOSSES	TOTAL LOSSES PD	DAMAGE CLAIMS SINCE '78
PALM BEACH COUNTY	120192	2/1/1979	78,414	$19,940,904,900.00	1,262	$12,167,201.78	35
CITY OF ATLANTIS	120193	11/1/1978	410	$99,632,100.00	18	$31,637,090.00	0
CITY OF BELLE GLADE	120194	5/15/1978	247	$60,899,900.00	3	$26,837.91	0
CITY OF BOCA RATON	120195	6/1/1978	15,810	$4,006,213,500.00	167	$1,050,859.46	0
CITY OF BOYNTON BEACH	120196	1/3/1979	10,105	$1,837,637,300.00	215	$957,785.03	0
TOWN OF BRINY BREEZES	120197	5/15/1978	124	$14,291,200.00	6	$14,227.77	0
TOWN OF CLOUD LAKE	120198	5/15/1978	13	$2,967,400.00	5	$20,317.57	0
CITY OF DELRAY BEACH	125102	4/9/1971	8,858	$1,941,584,600.00	305	$1,614,857.07	4
TOWN OF GLEN RIDGE	120200	5/15/1978	28	$7,135,900.00	4	$8,520.00	0
VILLAGE OF GOLF	120201	8/26/1977	20	$6,720,000.00	2	$42,999.54	0
CITY OF GREENACRES	120203	8/26/1977	429	$95,861,200.00	5	$33,262.32	0
TOWN OF GULF STREAM	125109	11/24/1972	358	$108,548,500.00	17	$74,130.15	0
TOWN OF HAVERHILL	120205	8/26/1977	27	$7,273,000.00	6	$70,254.16	0
TOWN OF HIGHLAND BEACH	125111	10/16/1970	4,171	$919,041,600.00	8	$113,301.37	0
TOWN OF HYPOLUXO	120207	5/15/1978	1,094	$215,600,100.00	5	$13,145.43	0
TOWN OF JUNO BEACH	120208	12/1/1978	1,725	$349,636,000.00	20	$306,718.36	0
TOWN OF JUPITER INLET COLONY	125120	9/22/1972	132	$41,428,200.00	8	$105,470.23	0
TOWN OF JUPITER	125119	9/22/1972	9,258	$2,055,668,400.00	195	$2,211,623.07	9
TOWN OF LAKE CLARK SHORES	120211	11/1/1978	276	$78,192,000.00	9	$27,254.62	0
TOWN OF LAKE PARK	120212	9/15/1978	921	$158,200,500.00	23	$622,665.46	1
CITY OF LAKE WORTH	120213	12/1/1978	1,846	$406,808,100.00	94	$475,527.97	0
TOWN OF LANTANA	120214	3/12/1971	1,213	$241,165,000.00	71	$905,919.85	1
TOWN OF MANALAPAN	120215	10/30/1970	242	$72,683,500.00	23	$226,023.96	0
TOWN OF MANGONIA PARK	120216	3/1/1978	52	$17,841,500.00	12	$465,502.44	0
VILLAGE OF NORTH PALM BEACH	120217	8/15/1978	4,032	$783,502,400.00	49	$35,816,855.00	1
TOWN OF OCEAN RIDGE	125134	4/9/1971	1,301	$289,216,300.00	89	$1,275,102.06	2
CITY OF PAHOKEE	120219	5/15/1978	110	$25,399,900.00	4	$45,582.20	0
CITY OF PALM BEACH GARDENS	120221	1/3/1979	3,790	$1,071,217,000.00	161	$1,400,648.81	0
TOWN OF PALM BEACH SHORES	125137	6/25/1971	984	$169,658,300.00	14	$178,579.10	0
TOWN OF PALM BEACH	120220	5/15/1978	7,944	$1,870,449,000.00	599	$11,499,283.21	21
VILLAGE OF PALM SPRINGS	120223	3/1/1978	1,547	$228,703,100.00	36	$182,235.26	0
CITY OF RIVIERA BEACH	125142	9/22/1972	5,576	$1,231,065,300.00	87	$1,359,982.83	3
VILLAGE OF ROYAL PALM BEACH	120225	8/26/1977	809	$213,498,200.00	10	$144,327.96	0
CITY OF SOUTH BAY	120226	8/26/1977	45	$9,150,100.00	0	$0.00	0
TOWN OF SOUTH PALM BEACH	120227	5/15/1978	1,553	$268,968,000.00	30	$1,341,736.26	2
VILLAGE OF TEQUESTA	120228	6/11/1971	1,243	$304,601,200.00	31	$261,270.90	0
VILLAGE OF WELLINGTON	125157	1/3/2001	367	$118,382,900.00	3	$11,123.39	0
CITY OF WEST PALM BEACH	120229	3/1/1979	7,461	$1,688,074,200.00	261	$3,338,620.78	16
NFIP COUNTYWIDE TOTALS			**36,762**	**$8,271,885,900.00**	**1,374**	**$56,855,347.76**	**45**

Source: Community Overviews (June 2009)

Palm Beach County

NFIP Policies & CRS Savings (August 2009)

Community Name	NFIP Policies	Annual Premium	CRS Reduction
City of Atlantis	398	$103,586.00	$4,267.00
City of Boca Raton	16,416	$4,869,664.00	$313,098.00
City of Boynton Beach	10,529	$3,035,004.00	$244,012.00
Town of Cloud Lake	10	$5,363.00	$437.00
City of Delray Beach	8,958	$3,395,207.00	$147,181.00
Town of Gulf Stream	376	$265,663.00	$21,012.00
Town of Highland Beach	4,208	$693,537.00	$33,276.00
Town of Hypoluxo	1,106	$281,260.00	$24,366.00
Town of Juno Beach	1,831	$381,131.00	$46,979.00
Town of Jupiter Island	427	$330,581.00	$21,843.00
Town of Jupiter	8,727	$2,495,503.00	$241,840.00
Town of Lake Clarke Shores	275	$108,607.00	$2,860.00
Town of Lake Park	1,147	$253,184.00	$9,833.00
City of Lake Worth	1,954	$871,022.00	$31,789.00
Town of Lantana	1,309	$548,974.00	$25,571.00
Town of Manalapan	249	$195,651.00	$9,702.00
Town of Mangonia Park	52	$48,354.00	$2,245.00
Village of North Palm Beach	3,940	$877,424.00	$55,551.00
Town of Ocean Ridge	1,330	$593,337.00	$53,866.00
Palm Beach County	78,063	$23,283,060.00	$2,798,152.00
City of Palm Beach Gardens	3,906	$1,360,820.00	$48,327.00
Town of Palm Beach Shores	935	$249,166.00	$10,663.00
Town of Palm Beach	8,114	$3,742,513.00	$509,183.00
Village of Palm Springs	1,495	$325,797.00	$29,354.00
Town of South Palm Beach	1,564	$307,595.00	$15,055.00
Village of Wellington	402	$174,508.00	$5,213.00
City of West Palm Beach	8,080	$2,164,096.00	$291,162.00
Totals	**165,801**	**$50,960,607.00**	**$4,996,837.00**

Palm Beach County
National Flood Insurance Program Community Profile (2009)

JURISDICTION	NFIP	CID	REGULAR ENTRY	CURRENT MAP	POLICIES IN FORCE	INSURANCE IN FORCE	NO. PD LOSSES	TOTAL LOSSES PD	DAMAGE CLAIMS SINCE '78
PALM BEACH COUNTY	YES	120192	2/1/1979	6/2/1992	78,414	$19,940,904,900.00	1,262	$12,167,201.78	35
CITY OF ATLANTIS	YES	120193	11/1/1978	11/1/1978	410	$99,632,100.00	18	$31,637,090.00	0
CITY OF BELLE GLADE	YES	120194	5/15/1978	9/30/1982	247	$60,899,900.00	3	$26,837.91	0
CITY OF BOCA RATON	YES	120195	6/1/1978	9/19/1984	15,810	$4,006,213,500.00	167	$1,050,859.46	0
CITY OF BOYNTON BEACH	YES	120196	1/3/1979	9/30/1982	10,105	$1,837,637,300.00	215	$957,785.03	0
TOWN OF BRINY BREEZES	YES	120197	5/15/1978	9/30/1982	124	$14,291,200.00	6	$14,227.77	0
TOWN OF CLOUD LAKE	YES	120198	5/15/1978	5/15/1978	13	$2,967,400.00	5	$20,317.57	0
CITY OF DELRAY BEACH	YES	125102	4/9/1971	1/5/1989	8,858	$1,941,584,600.00	305	$1,614,857.07	4
TOWN OF GLEN RIDGE	YES	120200	5/15/1978	5/15/1978	28	$7,135,900.00	4	$8,520.00	0
VILLAGE OF GOLF	YES	120201	8/26/1977	1/1/1950	20	$6,720,000.00	2	$42,999.54	0
CITY OF GREENACRES	YES	120203		8/26/1977	429	$95,861,200.00	5	$33,262.32	0
TOWN OF GULF STREAM	YES	125109	11/24/1972	9/30/1982	358	$108,548,500.00	17	$74,130.15	0
TOWN OF HAVERHILL	YES	120205	8/26/1977	1/1/1950	27	$7,273,000.00	6	$70,254.16	0
TOWN OF HIGHLAND BEACH	YES	125111	10/16/1970	9/30/1982	4,171	$919,041,600.00	8	$113,301.37	0
TOWN OF HYPOLUXO	YES	120207	5/15/1978	5/15/1978	1,094	$215,600,100.00	5	$13,145.43	0
TOWN OF JUNO BEACH	YES	120208	12/1/1978	9/30/1982	1,725	$349,636,000.00	20	$306,718.36	0
TOWN OF JUPITER INLET COLONY	YES	125120	9/22/1972	9/30/1982	132	$41,428,200.00	8	$105,470.23	0
TOWN OF JUPITER	YES	125119	9/22/1972	6/2/1992	9,258	$2,055,668,400.00	195	$2,211,623.07	9
TOWN OF LAKE CLARK SHORES	YES	120211	11/1/1978	11/1/1978	276	$78,192,000.00	9	$27,254.62	0
TOWN OF LAKE PARK	YES	120212	9/15/1978	9/15/1978	921	$158,200,500.00	23	$622,665.46	1
CITY OF LAKE WORTH	YES	120213	12/1/1978	9/30/1982	1,846	$406,808,100.00	94	$475,527.97	0
TOWN OF LANTANA	YES	120214	3/12/1971	10/15/1982	1,213	$241,165,000.00	71	$905,919.85	1
TOWN OF MANALAPAN	YES	120215	10/30/1970	9/30/1982	242	$72,683,500.00	23	$226,023.96	0
TOWN OF MANGONIA PARK	YES	120216	3/1/1978	3/1/1978	52	$17,841,500.00	12	$465,502.44	0
VILLAGE OF NORTH PALM BEACH	YES	120217	8/15/1978	6/2/1992	4,032	$783,502,400.00	49	$35,816,855.00	1

TOWN OF OCEAN RIDGE	YES	125134	4/9/1971	9/30/1982	1,301	$289,216,300.00	89	$1,275,102.06	2
CITY OF PAHOKEE	YES	120219	5/15/1978	10/15/1982	110	$25,399,900.00	4	$45,582.20	0
CITY OF PALM BEACH GARDENS	YES	120221	1/3/1979	1/6/1988	3,790	$1,071,217,000.00	161	$1,400,648.81	0
TOWN OF PALM BEACH SHORES	YES	125137	6/25/1971	9/30/1982	984	$169,658,300.00	14	$178,579.10	0
TOWN OF PALM BEACH	YES	120220	5/15/1978	9/30/1982	7,944	$1,870,449,000.00	599	$11,499,283.21	21
VILLAGE OF PALM SPRINGS	YES	120223	3/1/1978	12/22/1998	1,547	$228,703,100.00	36	$182,235.26	0
CITY OF RIVIERA BEACH	YES	125142	9/22/1972	9/30/1982	5,576	$1,231,065,300.00	87	$1,359,982.83	3
VILLAGE OF ROYAL PALM BEACH	YES	120225	8/26/1977	1/1/1950	809	$213,498,200.00	10	$144,327.96	0
CITY OF SOUTH BAY	YES	120226	8/26/1977	1/1/1950	45	$9,150,100.00	0	$0.00	0
TOWN OF SOUTH PALM BEACH	YES	120227	5/15/1978	9/30/1982	1,553	$268,968,000.00	30	$1,341,736.26	2
VILLAGE OF TEQUESTA	YES	120228	6/11/1971	9/30/1982	1,243	$304,601,200.00	31	$261,270.90	0
VILLAGE OF WELLINGTON	YES	125157	1/3/2001	1/1/1950	367	$118,382,900.00	3	$11,123.39	0
CITY OF WEST PALM BEACH	YES	120229	3/1/1979	3/1/1979	7,461	$1,688,074,200.00	261	$3,338,620.78	16
NFIP COUNTYWIDE TOTALS					**36,762**	**$8,271,885,900.00**	**1,374**	**$56,855,347.76**	**45**

Palm Beach County
CRS Points by Activity by Jurisdiction (August 2009)

COMMUNITY NAME	C310	C320	C330	C340	C350	C360	C410	C420	C430	C440	C450	C510	C520	C530	C540	C610	C620	C630	TOTAL POINTS
CITY OF ATLANTIS	56	140	124	0	28	0	0	323	13	0	76	0	0	0	280	90	0	67	1,197
CITY OF BOCA RATON	56	140	43	0	22	35	0	154	121	114	92	0	0	0	280	160	0	67	1,284
CITY OF BOYNTON BEACH	56	140	137	0	46	27	0	58	121	80	173	0	0	0	280	130	0	67	1,315
TOWN OF CLOUD LAKE	56	140	242	0	26	0	0	0	318	0	114	0	0	0	280	145	0	67	1,388
CITY OF DELRAY BEACH	56	140	10	0	28	0	0	46	114	0	114	0	0	0	0	0	0	67	575
CITY OF GULF BREEZE	56	140	0	0	19	0	0	433	53	0	0	0	0	0	0	0	0	67	768
TOWN OF GULF STREAM	56	140	144	0	23	0	0	442	51	0	0	0	0	0	280	125	0	67	1,328
TOWN OF HIGHLAND BEACH	56	140	3	0	0	0	0	46	38	0	127	0	0	0	250	0	0	67	727
TOWN OF JUNO BEACH	70	140	290	0	63	48	0	797	215	205	135	62	0	0	300	110	0	67	2,502
TOWN OF JUPITER ISLAND	56	140	149	0	22	0	0	223	121	172	111	0	0	0	160	130	0	67	1,351
TOWN OF JUPITER	56	140	268	0	23	66	0	273	241	149	149	0	0	0	250	130	0	67	1,812
TOWN OF LAKE CLARKE SHORES	56	140	0	0	21	0	0	0	38	0	32	0	0	0	200	0	0	67	554
TOWN OF LAKE PARK	56	140	100	0	26	0	0	56	114	0	114	0	0	0	200	0	0	67	873
CITY OF LAKE WORTH	56	140	135	0	26	0	0	56	114	0	114	0	0	0	0	0	0	67	708
TOWN OF LANTANA	56	140	142	0	26	0	0	0	38	61	32	0	0	0	250	0	0	67	812
TOWN OF MANALAPAN	56	140	54	0	3	0	0	0	94	128	0	0	0	0	280	0	0	67	822
TOWN OF MONGONIA PARK	56	140	48	0	26	0	0	0	0	38	0	0	0	0	250	0	0	67	625
VILLAGE OF NORTH PALM BEACH	45	140	66	0	23	63	0	525	74	0	32	0	0	0	250	85	0	67	1,370
TOWN OF OCEAN RIDGE	56	140	68	0	26	0	0	168	248	0	32	0	0	0	250	125	0	67	1,180
CITY OF PALM BAY	71	140	210	0	77	58	44	173	429	196	145	0	0	0	255	0	0	67	1,865
PALM BEACH COUNTY	112	140	149	0	60	13	0	349	302	165	239	62	0	0	280	151	0	67	2,089
CITY OF PALM BEACH GARDENS	56	140	258	0	54	0	0	189	163	61	114	0	0	0	255	0	0	67	1,357
TOWN OF PALM BEACH SHORES	56	140	0	0	21	0	0	0	38	61	32	0	0	0	200	0	0	67	615
TOWN OF PALM BEACH	56	140	262	0	20	35	0	382	60	0	89	102	0	0	330	155	0	67	1,698
VILLAGE OF PALM SPRINGS	56	140	61	0	2	35	0	46	279	0	32	0	0	0	280	120	0	67	1,118
TOWN OF SOUTH PALM BEACH	56	0	57	0	20	0	0	0	38	0	32	0	0	0	250	0	0	67	520
VILLAGE OF WELLINGTON	56	0	45	0	0	0	0	0	318	0	32	0	0	0	280	0	0	67	798
CITY OF WEST PALM BEACH	52	140	149	0	56	59	0	669	130	128	114	62	0	0	300	88	0	67	2,014

Palm Beach County
Repetitive Loss Properties & Severe Repetitive Loss Properties (2009)*

Jurisdiction	Repetitive Loss Property	Severe Repetitive Loss
Atlantis	1	
Boca Raton	4	
Boynton Beach	12	
Cloud Lake	1	
Delray Beach	16	
Gulf Stream	2	
Haverhill	1	
Highland Beach	1	
Juno Beach	4	
Jupiter	7	
Lake Park	3	
Lake Worth	9	
Lantana	6	
Manalapan	3	
Mangonia Park	2	
North Palm Beach	2	
Ocean Ridge	15	
Pahokee	1	
Palm Beach County	70	
Palm Beach Gardens	5	
Palm Beach Shores	2	
Palm Beach	77	4
Palm Springs	1	
Riviera Beach	10	
South Palm Beach	1	
Tequesta	2	
West Palm Beach	27	1
Countywide Total	**285**	**5**

Source: NFIP/FEMA

* Details are published in public documents for reasons of privacy, but on file with the LMS Coordinator and are available upon request to authorized parties.

Breakdown of Repetitive Loss Properties by Use

Use	Number	Percent
Single family	195	68.4
2-4 family	20	7.0
Other residential	29	10.2
Condominium	7	2.5
Non-residential	34	11.9
Total	**285**	

Survey of Higher Standard NFIP & Floodplain Management Activities

Jurisdiction: _____ ***Contact Name:*** _____
Contact Information (Tele or e-mail): _____

Survey of Local NFIP/CRS Program Administrative Components

Office designated as Floodplain Administrator: _____
Do you have a Flood Damage Reduction Ordinance? _____
If so indicate date of plan: _____ Section # _____
Do you have a Subdivision Ordinance? _____
If so, date of Ordinance _____ Number _____
Does your community participate in the Community Rating System program (CRS)? _____
If so, what is your current Class Rating? _____

The next items relate to "higher standard" actions that exceed what is required by the National Flood Insurance Program. These items are more applicable to communities who participate in the Community Rating System (CRS) program, however, some non-CRS communities may do some of them as well. We need to know who does what.

Does your ordinance cover any of the following higher standard actions which exceed NFIP standards? _____

If so, please complete the following two steps:

1. *Go through the following items (A to W) one at a time and put a check mark to the left of any you do in your community.*

2. *If you have checked any items, rank order 5 (only 5) of the checked items by putting a 1 beside the item you feel is the highest priority item, a 2 beside the next most important item, etc. up to 5.*

☐ A. Requiring buildings to be protected to a level higher than the base flood elevation. The extra protection is called freeboard and the element appears as "FRB" in the calculation formulae.

☐ B. Requiring that fill and building foundations be designed to protect them from damage due to erosion, scour, and settling. The acronym for foundation protection is "FDN."

☐ C. Requiring that all improvements or repairs are counted cumulatively toward the substantial improvement requirement. This requirement, known as cumulative substantial improvement, or "CSI," ensures that owners do not evade flood protection measures by making many small improvements that eventually add up to a major or substantial improvement.

☐ D. Using a threshold lower than 50% of the building's value to determine when the substantial improvement requirement takes effect. The acronym for a lower substantial improvement threshold is "LSI."

☐ E. Requiring that critical facilities, such as hospitals and hazardous materials storage sites, be protected from higher flood levels. "PCF" stands for protecting critical facilities.

☐ F. Maintaining floodplain storage by prohibiting fill or by requiring compensatory storage.

☐ G. Although floodway regulations preserve flood conveyance, they allow the flood fringe to be filled in. The resulting loss of storage can have a significant effect on downstream flood heights, especially in flat areas. The acronym for preserving flood storage capacity is "PSC."

☐ H. Prohibiting or regulating developments that can have an adverse impact on public health or water quality, including alterations to shoreline, channels, and banks. Because such regulations protect the natural and beneficial functions of floodplains, the acronym is "NBR."

☐ I. Prohibiting the lower areas of elevated buildings from being enclosed ("ENL").

☐ J. Other regulations that exceed the minimum requirements of the NFIP regulations. The acronym for such other higher regulatory standards is "OHS."

☐ K. Zoning to minimize the number of buildings in the floodplain. Low density zoning ("LZ") reduces the damage potential within the floodplain and helps maintain flood storage and conveyance capacity.

☐ L. Requiring additional regulations in areas subject to special hazards. The NFIP regulations are oriented toward the more common overbank and coastal flooding. Special hazards regulations ("SH") are requirements tailored to the different conditions found in the following situations:

- Closed basin lakes • Mudflow hazards
- Ice jams • Coastal erosion
- Land subsidence • Tsunamis
- Coastal dunes and beaches
- Uncertain flow paths (e.g., alluvial fans and moveable bed streams)

☐ M. Implementing state-mandated regulatory standards ("SMS") whereby all communities are required to administer a state rule or adopt state development criteria.

☐ N. Having a Building Code Effectiveness Grading Schedule classification of 6 or better and/or trained or certified regulatory staff ("BCS").

☐ O. Requirements for developers or sellers to publicize or disclose the flood hazard on their properties are credited under Activity 340 (Flood Hazard Disclosure).

☐ P. Requiring permit applicants to develop base flood elevations or study the impact of their projects on flood heights or velocities in floodplains where such data are not provided by the NFIP is credited under Activity 410 (Additional Flood Data).

☐ Q. More restrictive floodway mapping, "zero rise floodway," and "full urbanization hydrology" requirements are also covered under Activity 410.

☐ R. Prohibiting new buildings in the floodway, V Zone, or other part of the floodplain is credited under Activity 420 (Open Space Preservation). A community can only receive credit for a prohibitory regulation under either Activity 420 or Activity 430, not under both. Activity 420 provides more credit points than Activity 430 does because new buildings are better protected from flooding if they are kept out of the floodplain in the first place. Therefore, most communities opt to credit prohibitory regulations under Activity 420.

☐ S. Requiring new developments to provide retention or detention of their stormwater runoff to minimize the increase in flood flows due to watershed urbanization is the subject of Activity 450 (Stormwater Management).

☐ T. Erosion and sedimentation control regulations are also covered in Activity 450 because they reduce siltation and the resulting loss of channel carrying capacity.

☐ U. Requiring developers to implement appropriate "best management practices" that will improve the quality of stormwater runoff is credited in Activity 450.

☐ V. Regulations on dumping or placing debris in stream channels are credited under Activity 540 (Drainage System Maintenance).

☐ W. Regulating new development downstream of dams to protect it from flooding from a dam break is credited in Activity 630 (Dam Safety).

Floodplain Management Activities

Are floodplain management provisions integrated into other plans? _____

If so, check which ones?

- ☐ Comp Plan
- ☐ Zoning Ordinance,
- ☐ Resource Protection Regulations
- ☐ Other: (Specify) _____

Check any of the following actions you do in your community:

- ☐ AA. Change permitting forms to require identification of FIRM, date, zone, Base Flood Elevation.
- ☐ BB. Checklist for review of building/development permit plans and inspections
- ☐ CC. Plan reviewer/inspector training
- ☐ DD. Have Certified Floodplain Manager continuing education
- ☐ EE. Workshops for surveyors/developers
- ☐ FF. Pursue certified Floodplain Manager certifications
- ☐ GG. Maintain maps of areas that flood frequently
- ☐ HH. Evaluate FEMA's Substantial Improvement/Substantial Damage Desk references
- ☐ II. Acquired FEMA's Substantial Damage Estimator
- ☐ JJ. Provide the public with FEMA/NFIP reference materials
- ☐ KK. Provide handouts on flood topics to permit applicants
- ☐ LL. Evaluate changes to enhance your NFIP/CRS program
- ☐ MM. Encourage participation of non-CRS communities in CRS

KEY TO HIGHER STANDARD NFIP ACTIONS

A. Requiring buildings to be protected to a level higher than the base flood elevation. The extra protection is called freeboard and the element appears as “FRB” in the calculation formulae.

B. Requiring that fill and building foundations be designed to protect them from damage due to erosion, scour, and settling. The acronym for foundation protection is “FDN.”

C. Requiring that all improvements or repairs are counted cumulatively toward the substantial improvement requirement. This requirement, known as cumulative substantial improvement, or “CSI,” ensures that owners do not evade flood protection measures by making many small improvements that eventually add up to a major or substantial improvement.

D. Using a threshold lower than 50% of the building’s value to determine when the substantial improvement requirement takes effect. The acronym for a lower substantial improvement threshold is “LSI.”

E. Requiring that critical facilities, such as hospitals and hazardous materials storage sites, be protected from higher flood levels. “PCF” stands for protecting critical facilities.

F. Maintaining floodplain storage by prohibiting fill or by requiring compensatory storage.

G. Although floodway regulations preserve flood conveyance, they allow the flood fringe to be filled in. The resulting loss of storage can have a significant effect on downstream flood heights, especially in flat areas. The acronym for preserving flood storage capacity is “PSC.”

H. Prohibiting or regulating developments that can have an adverse impact on public health or water quality, including alterations to shoreline, channels, and banks. Because such regulations protect the natural and beneficial functions of floodplains, the acronym is “NBR.”

I. Prohibiting the lower areas of elevated buildings from being enclosed (“ENL”).

J. Other regulations that exceed the minimum requirements of the NFIP regulations. The acronym for such other higher regulatory standards is “OHS.”

K. Zoning to minimize the number of buildings in the floodplain. Low density zoning (“LZ”) reduces the damage potential within the floodplain and helps maintain flood storage and conveyance capacity.

L. Requiring additional regulations in areas subject to special hazards. The NFIP regulations are oriented toward the more common overbank and coastal flooding. Special hazards regulations (“SH”) are requirements tailored to the different conditions found in the following situations:
    - Closed basin lakes • Mudflow hazards
    - Ice jams • Coastal erosion
    - Land subsidence • Tsunamis
    - Coastal dunes and beaches
    - Uncertain flow paths (e.g., alluvial fans and moveable bed streams)

M. Implementing state-mandated regulatory standards ("SMS") whereby all communities are required to administer a state rule or adopt state development criteria.

N. Having a Building Code Effectiveness Grading Schedule classification of 6 or better and/or trained or certified regulatory staff ("BCS").

O. Requirements for developers or sellers to publicize or disclose the flood hazard on their properties are credited under Activity 340 (Flood Hazard Disclosure).

P. Requiring permit applicants to develop base flood elevations or study the impact of their projects on flood heights or velocities in floodplains where such data are not provided by the NFIP is credited under Activity 410 (Additional Flood Data).

Q. More restrictive floodway mapping, "zero rise floodway," and "full urbanization hydrology" requirements are also covered under Activity 410.

R. Prohibiting new buildings in the floodway, V Zone, or other part of the floodplain is credited under Activity 420 (Open Space Preservation). A community can only receive credit for a prohibitory regulation under either Activity 420 or Activity 430, not under both. Activity 420 provides more credit points than Activity 430 does because new buildings are better protected from flooding if they are kept out of the floodplain in the first place. Therefore, most communities opt to credit prohibitory regulations under Activity 420.

S. Requiring new developments to provide retention or detention of their stormwater runoff to minimize the increase in flood flows due to watershed urbanization is the subject of Activity 450 (Stormwater Management).

T. Erosion and sedimentation control regulations are also covered in Activity 450 because they reduce siltation and the resulting loss of channel carrying capacity.

U. Requiring developers to implement appropriate "best management practices" that will improve the quality of stormwater runoff is credited in Activity 450.

V. Regulations on dumping or placing debris in stream channels are credited under Activity 540 (Drainage System Maintenance).

W. Regulating new development downstream of dams to protect it from flooding from a dam break is credited in Activity 630 (Dam Safety).

KEY FOR FLOODPLAIN MANAGEMENT ACTIONS

AA. Change permitting forms to require identification of FIRM, date, zone, Base Flood Elevation.

BB. Checklist for review of building/development permit plans and inspections

CC. Plan reviewer/inspector training

DD. Have Certified Floodplain Manager continuing education

EE. Workshops for surveyors/developers

FF. Pursue certified Floodplain Manager certifications

GG. Maintain maps of areas that flood frequently

HH. Evaluate FEMA's Substantial Improvement/Substantial Damage Desk references

II. Acquired FEMA's Substantial Damage Estimator

JJ. Provide the public with FEMA/NFIP reference materials

KK. Provide handouts on flood topics to permit applicants

LL. Evaluate changes to enhance your NFIP/CRS program

MM. Encourage participation of non-CRS communities in CRS

NN. Integration of floodplain management provisions into other plans

Summary of Palm Beach County Higher Standard
NFIP Activities & Priority Rankings of Top 5 by Jurisdictions

Jurisdiction	A	B	C	D	E	F	G	H	I	J	K	M	N	O	P	Q	R	S	T	U	V	W	X	Y
Unincorporated County																								
Atlantis																								
Belle Glade																								
Boca Raton																								
Boynton Beach																								
Briny Breezes																								
Cloud Lake																								
Delray Beach																								
Glen Ridge																								
Greenacres City																								
Gulf Stream																								
Haverhill																								
Highland Beach																								
Hypoluxo																								
Juno Beach																								
Jupiter																								
Jupiter Inlet Colony																								
Lake Clarke Shores																								
Lake Park																								
Lake Worth																								
Lantana																								
Loxahatchee Groves																								
Manalapan																								
Mangonia Park																								
Ocean Ridge																								
Pahokee																								
Palm Beach																								
Palm Beach Gardens																								
Palm Beach Shores																								
Riviera Beach																								
South Bay																								
Tequesta Village																								
South Palm Beach																								
Golf Village																								
North Palm Beach																								
Palm Springs																								
Royal Palm Beach																								
Wellington																								
West Palm Beach																								

Summary of Palm Beach County Floodplain Management Activities by Jurisdiction

Jurisdiction	AA	BB	CC	DD	EE	FF	GG	HH	II	JJ	KK	LL	MM	NN
Unincorporated County														
Atlantis														
Belle Glade														
Boca Raton														
Boynton Beach														
Briny Breezes														
Cloud Lake														
Delray Beach														
Glen Ridge														
Greenacres City														
Gulf Stream														
Haverhill														
Highland Beach														
Hypoluxo														
Juno Beach														
Jupiter														
Jupiter Inlet Colony														
Lake Clarke Shores														
Lake Park														
Lake Worth														
Lantana														
Loxahatchee Groves														
Manalapan														
Mangonia Park														
Ocean Ridge														
Pahokee														
Palm Beach														
Palm Beach Gardens														
Palm Beach Shores														
Riviera Beach														
South Bay														
Tequesta Village														
South Palm Beach														
Golf Village														
North Palm Beach														
Palm Springs														
Royal Palm Beach														
Wellington														
West Palm Beach														

Community Rating System Users Group

Palm Beach County and 20 participating CRS communities have merged to form the first of its type in the nation CRS Users Group. Comprised of the CRS Coordinators and private sector and non-profit partners, the Users Group meets at least monthly to share ideas and experiences in each of the 18 CRS Activity areas. The purpose of the group is to promote best practices in floodplain management and to leverage resources for public outreach. CRS Users Group meetings are well attended. The group is serving as a model within ISO as is its comprehensive flood awareness website. Active private sector partners include regional malls, a local television network, the regional newspaper, and two local radio stations. Numerous other public sector, private sector and non-governmental organizations participate in CRS outreach and education activities. The State and FEMA have been active partners in Users Group Activities. The Users Group organized one of the few off site CRS Coordinator Classes run by ISO. ISO has approached the group to consider new innovative activities. Meeting and events are open to the public. The 2009 Exposition drew tens of thousands of mall patrons through the exposition area. Hundreds of flood and hurricane pamphlets and brochures were handed out. Experts were on hand to answer questions.

Special Appendix IV: Mitigation Assessment Teams (MATs)

Should Palm Beach County be impacted by a natural disaster deemed by FEMA to be of national significance, teams of technical specialists, referred to as Mitigation Assessment Teams (MATs), might be mobilized by FEMA, in conjunction with State and local officials, to conduct on-site qualitative engineering analyses to assess damage to government offices, homes, hospitals, schools businesses, critical facilities and other structures and infrastructure. The purpose of the assessment would be to determine the causes of structural failures (or successes) and to evaluate the adequacy of local building codes, practices and construction materials for the purpose of improving future performance. They also might use the opportunity to review the effectiveness of previous mitigation projects.

Most frequently MATs would be mobilized by FEMA's Directorate in response to joint federal, state and local requests for technical support.

The technical make-up of MATs will depend largely on the nature and extent of damage incurred. Disciplines most commonly represented are likely to include: civil and coastal engineering, hydraulics, architecture, construction, and building code development and enforcement. If the damage is severe enough, representatives from FEMA Headquarters, Regional Office engineers, representatives from other Federal agencies and academia, and experts from the design and construction industry may also participate. State representatives would be dispatched by the Mitigation Bureau. The County would be expected to provide local team members and support services as defined below.

At the county level, during activations, the Operations Section Chief will be responsible for coordinating with the Logistics Section to arrange for local personnel, equipment, vehicles, data, and other resources necessary to support MAT assessments. Once staffed and equipped, MAT activities will be closely supported by the Damage Assessment and Impact Assessment Units of the Operations Section under the direction of the Operations Section Chief. Most likely FEMA and State representatives will bring personal resources such as laptop computers, cell phones, GPS, etc. with them in their Go Bags, however, backup inventories and sources for local resources will be maintained.

According to NIMS/ICS task force guidelines, federal and state MATs may choose to coordinate their activities with local law enforcement homeland security units who commonly perform critical infrastructure and key resource (CI/KR) field assessments within the county. This temporary disaster response task force may also include special operations personal from the fire service as necessary. Non-sensitive information from local law enforcement's established database will be shared to the fullest extent possible with the MATs. Any exchange of information associated with this initiative will limited so as not to compromise local law enforcement's tactical or strategic capabilities or the region's efforts in CI/KR programs in support of the National Infrastructure Protection Plan (NIPP).

Lists of needed resources will be prepared by the Operations Manager and given to the Logistics Manager who will be responsible for maintaining the inventories at the EOC or other county facilities and ensuring equipment is secured, available and ready for deployment. A representative list of locally available resources and sources is provided at the end of this section. Access to special or emergency resources beyond the working inventory, may be available through the Purchasing Unit, through the ESF18 (Business & Industry) functions at the regional and state levels, through WebEOC source lists or though private sector partners party to the Business Continuity Information Network (BCIN).

The County will provide appropriate public sector and private sector technical, operational, logistical, administrative, and planning expertise necessary to support the mitigation assessment mission. Lists of emergency contacts will be maintained by the Logistics Section.

Depending on the geographic distribution and severity of damage throughout the county, the MAT might establish its base(s) of operation at the Emergency Operations Center or at sites near any or all of the six Emergency Operating Areas (EOAs).

The MATs may work in conjunction with Damage Assessment Teams or independently, based on need, time priorities and the availability of State and FEMA MAT personnel.

The mission of the MATs is to learn exactly what happened and why, and how to reduce disaster damage in the future. Key questions include: How did buildings perform? Did winds exceed building codes? Did flood damages go beyond special flood hazard areas? Were building codes followed and enforced? Were construction materials sufficient to withstand wind and water damages? Were protective measures such as shutters used? Were local, State and Federal building standards and ordinances sufficient?

Palm Beach County is the largest county by area in the U.S. east of the Mississippi River. Most of its population and development are heavily concentrated in the eastern corridor within 10 miles of the coastline. The County's emergency management planning is based on the assumption that the county may not be serviced effectively by a single EOC location. Consequently, the County has been divided into six Emergency Operations Areas, each of which is equipped to function on its own before, during and after a disaster. Pre-equipped field response trailers are available for deployment year round. Where lead times are sufficient, resources will be pre-staged. Mitigation assessment resources may not be available for all EOAs concurrently, in which case the Operations Section Chief will work with the MAT to identify priorities and will request additional resources through Logistics.

If available local personnel resources are insufficient, the County may be able to draw mutual aid support from neighboring counties on an as needed basis. The Logistics and Operations Sections may also coordinate with the Florida Department of Community Affairs and Florida Department of Emergency Management, as necessary and appropriate, to arrange for field support from organizations such as the International Code Council.

Based on a comprehensive analysis of assessment data compiled in the field, the teams will prepare recommendations regarding construction codes and standards, building design, and best practices that the county, its municipalities and the construction industry can use to reduce future disaster damage. Throughout the process, the MAT will consult with partnering government agencies and supporting private sector organizations to ensure consensus on each phase of the investigation, including methodology, data collection, and analysis. This will help to ensure the MAT's final recommendations represent the most current and best available data and technical expertise. Once consensus is reached, FEMA will issue a series of "Recovery Advisories" that will provide initial guidance on building issues and best practices that can be used in the reconstruction process. FEMA will also publish a comprehensive report that provides local decision makers with information and detailed technical recommendations for improving building construction and design, building code policy and enforcement, and mitigation activities that can limit or eliminate damages in future disasters.

MAT observations and recommendations submitted to the Local Mitigation Strategy will provide a basis for future mitigation strategies, initiatives and projects and the optimum uses of

mitigation assistance funds.

Mitigation assessment is a relatively new and not yet fully understood capability to the county. Special Standard Operating Guidelines, job aids, and training programs will need to be gradually phased into the County's training programs. Mitigation assessment will also need to be integrated into the county's hazard-specific Coordinating Operating Procedures.

Disaster mitigation funding applications to FEMA and the State will be prepared and submitted in accordance with LMS guidelines outlined in Section 5 of this plan. The LMS Steering Committee will provide oversight. The LMS Coordinator will facilitate and coordinate the application process and serve as a primary communication link with funding agencies.

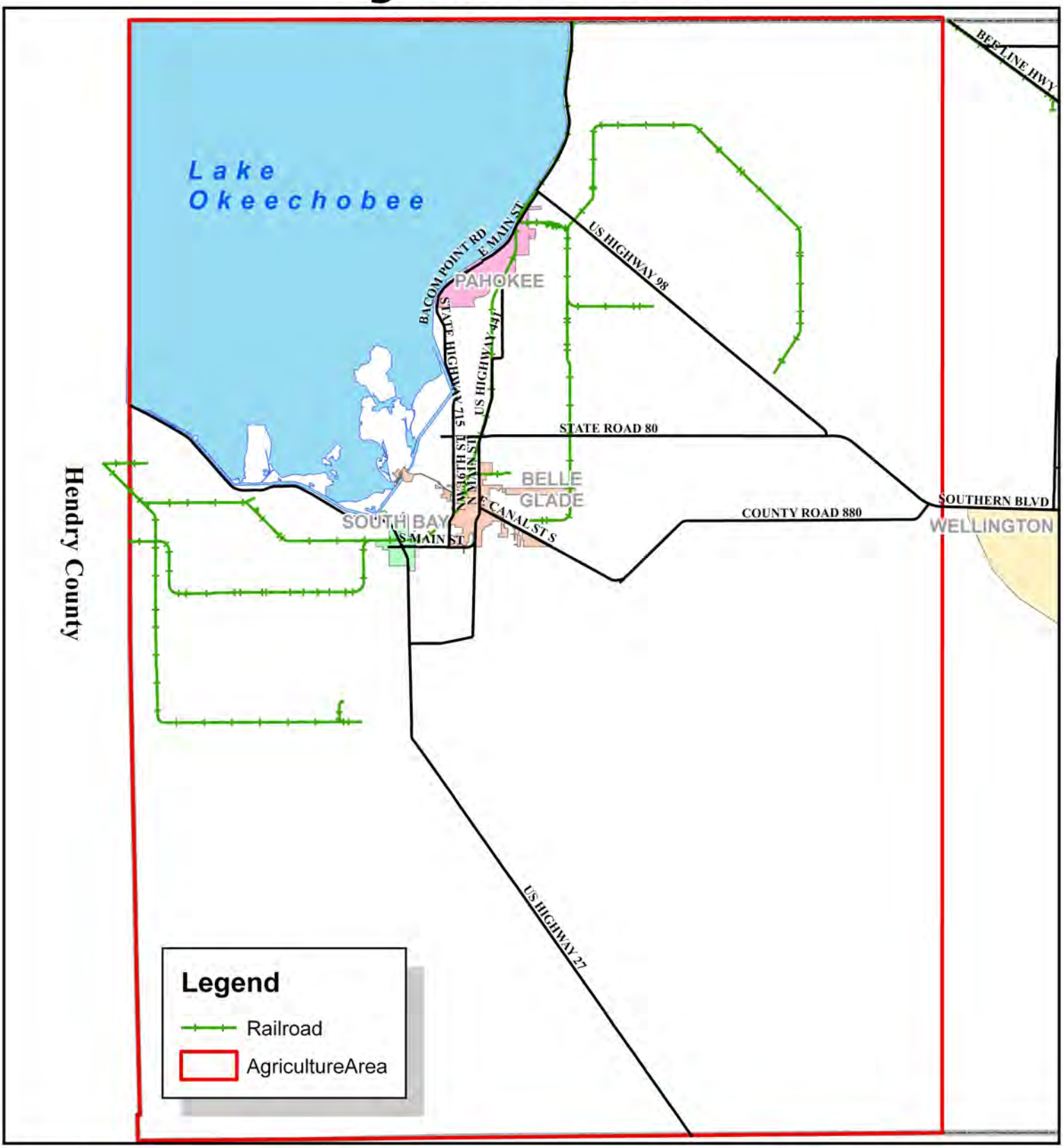
Public information will be coordinated through the Joint Information Center (ESF-14), based on cleared information provided by the MATs and Disaster Recovery Centers. Longer-term, information will be integrated into media releases, LMS and CRS outreach activities, public presentations, presentations at professional conferences, training curricula, etc.

At this writing, Standard Operating Guidelines for mitigation assessment activities were in the early planning stage. Palm Beach County Division of Emergency Management is in discussions with the Inspections Section of the County's Building Department to lay a foundation for development of SOGs. Many of the 38 municipalities of the County have their own building departments, officials, and procedures and will be an integral part of the procedure development process. Several of these departments can draw from their damage assessment experiences following Hurricane Andrew in 1992 and to a lesser extent their experiences following Hurricane Frances, Jeanne and Wilma which impacted Palm Beach County. Organizations such as the Palm Beach County Builder's Association and the Building Code Advisory Board of Palm Beach County will also need to be consulted.

MAT Resource List

Resource	Source	Location
Vehicles (Standard)	Fleet & Fuel Unit	Vista Center
Vehicles (Specialized)	Law Enforcement Unit Firefighting Unit Public Works Unit	EOC
Maps (Street)	Operations Section, GIS	EOC
Maps (Flood Insurance Rate Maps), Surge Atlas	PBCDEM Mitigation; Building Department, GIS	EOC; Vista Center
Maps GIS	Documentation Unit	EOC
GPS	Engineering/ Land Survey	Vista
Cell Phones	Communications Unit	EOC (Cache)
Radios	Communications Unit	EOC, Vista Center (Radio Shop)
Clipboards	Logistics Section/Services Unit	EOC, Warehouse
Office Supplies	Logistics Section/Services Unit	EOC, Warehouse
Laptop Computers	ISS	EOC
Flashlights	Logistics Section/Services Unit	EOC
Conference Room	Operations Section	EOC (EOAs if available)
Tour Guides	Logistics Section, Human Resources Unit, Volunteers Unit	EOC

Palm Beach County
Agricultural Area



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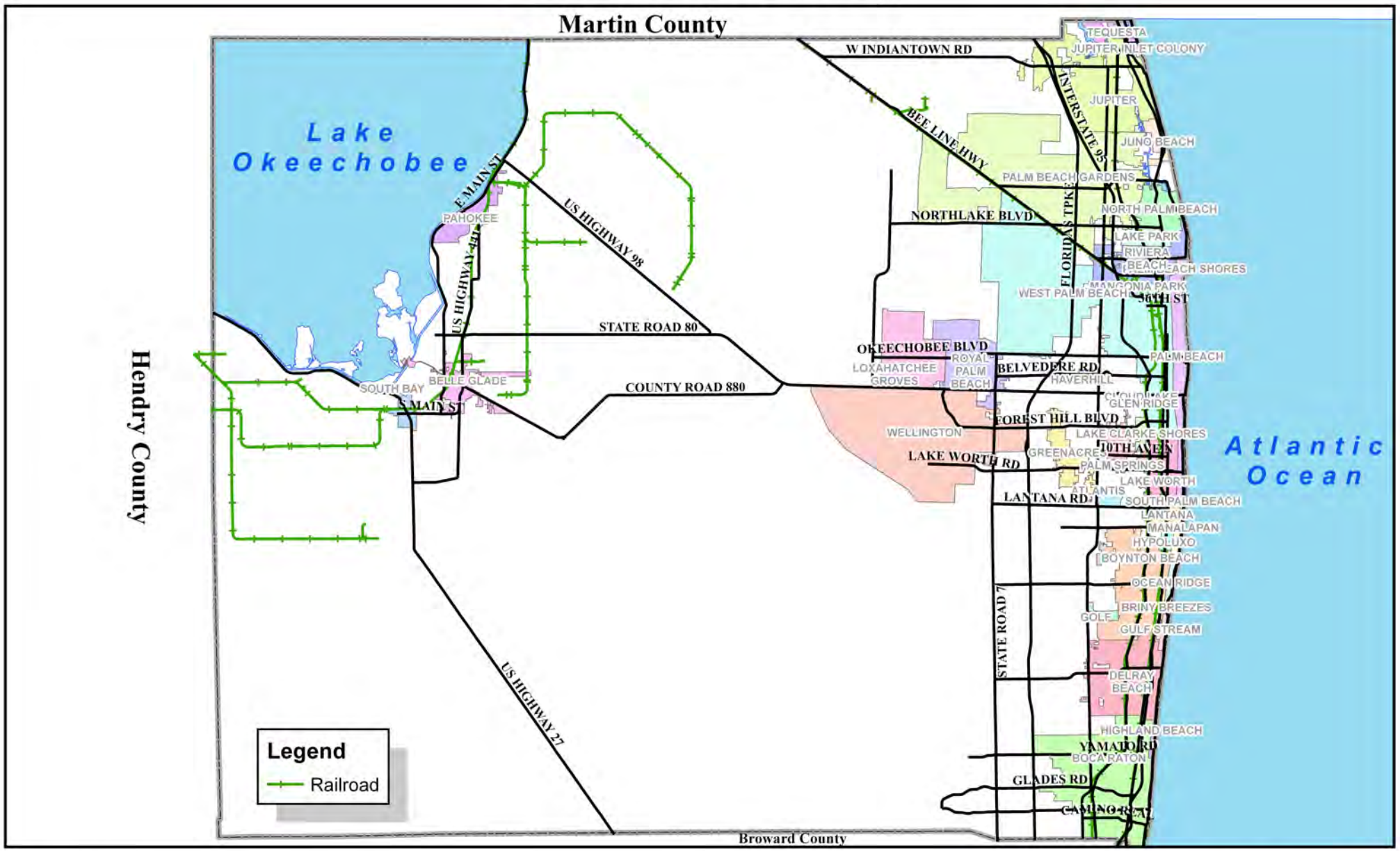
Miles

Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 6, 2009
Data Source: Palm Beach Countywide GIS

Palm Beach County



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Miles

Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 6, 2009
Data Source: Palm Beach Countywide GIS

Palm Beach County
Coastal Erosion Area

Northern Palm Beach County

Southern Palm Beach County

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Legend

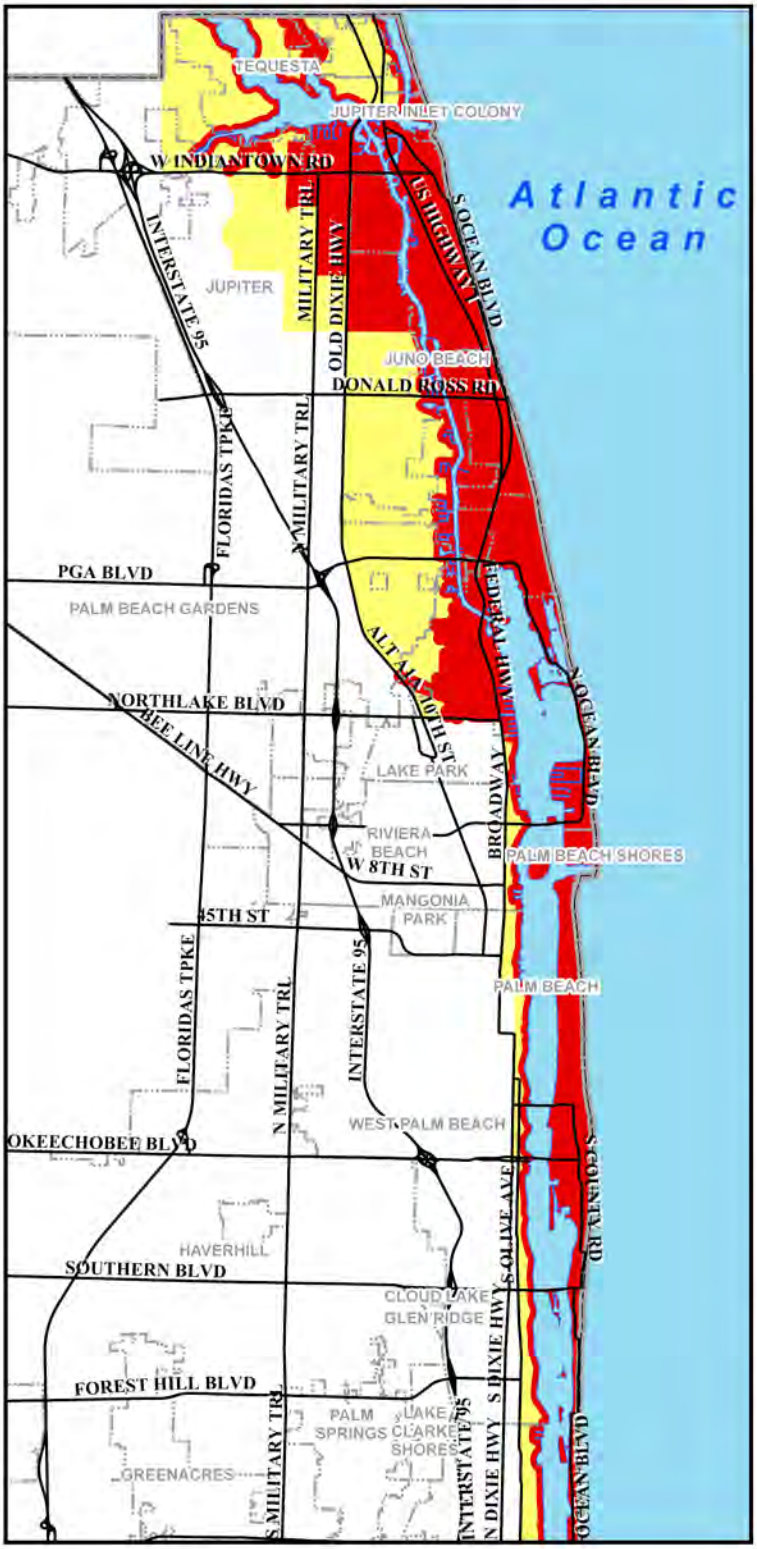
- Coastal Erosion Area
- .25 Mile Buffer

PALM BEACH COUNTY • FLORIDA •

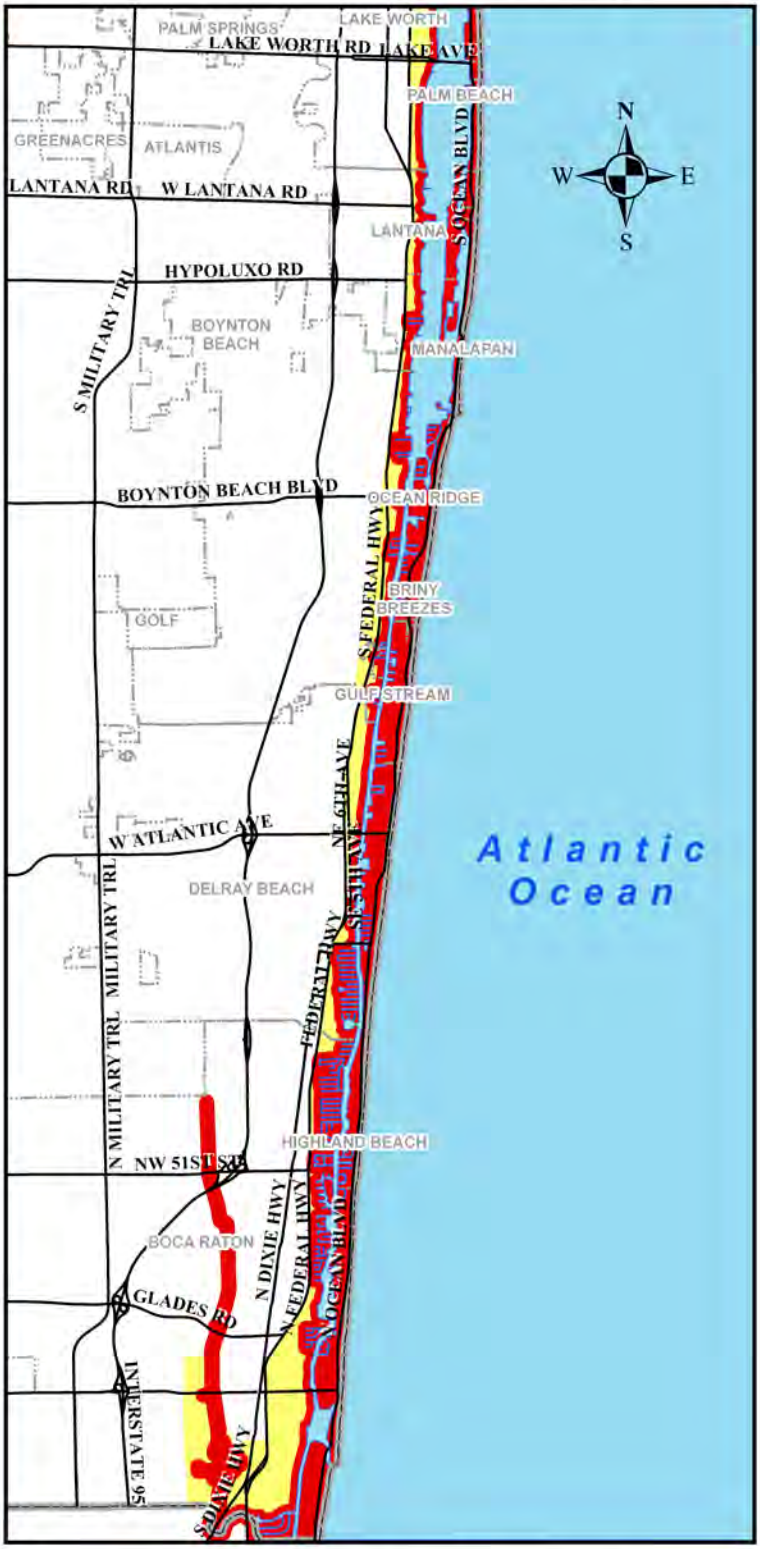
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 11, 2009
Data Source: Palm Beach County Environmental Resource Management

Palm Beach County Evacuation Zones

Northern Palm Beach County



Southern Palm Beach County



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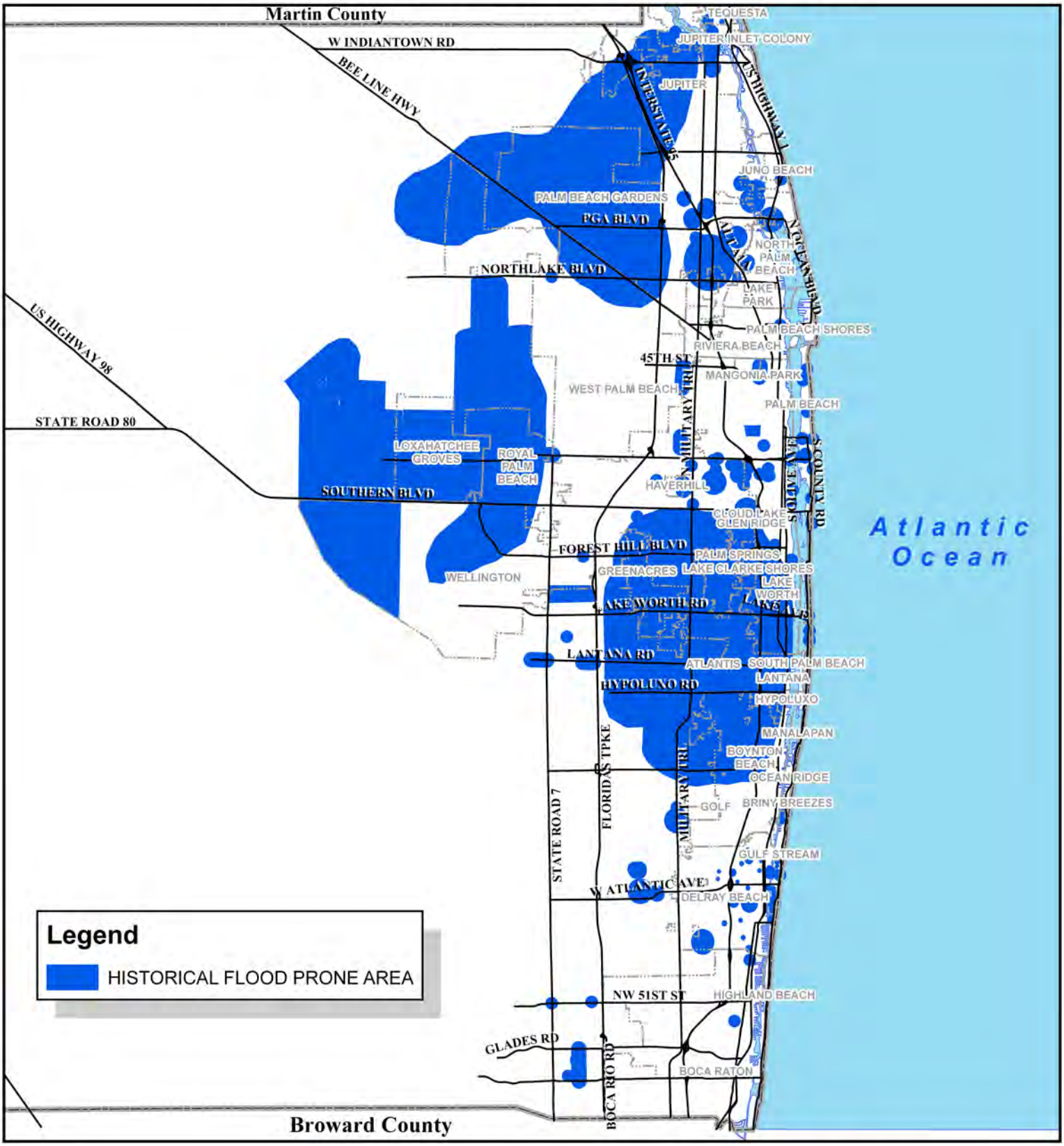
EVACUATION ZONES

- PLAN A (Category 1 & 2 Storms)
- PLAN B Category 3, 4 & 5 Storms)

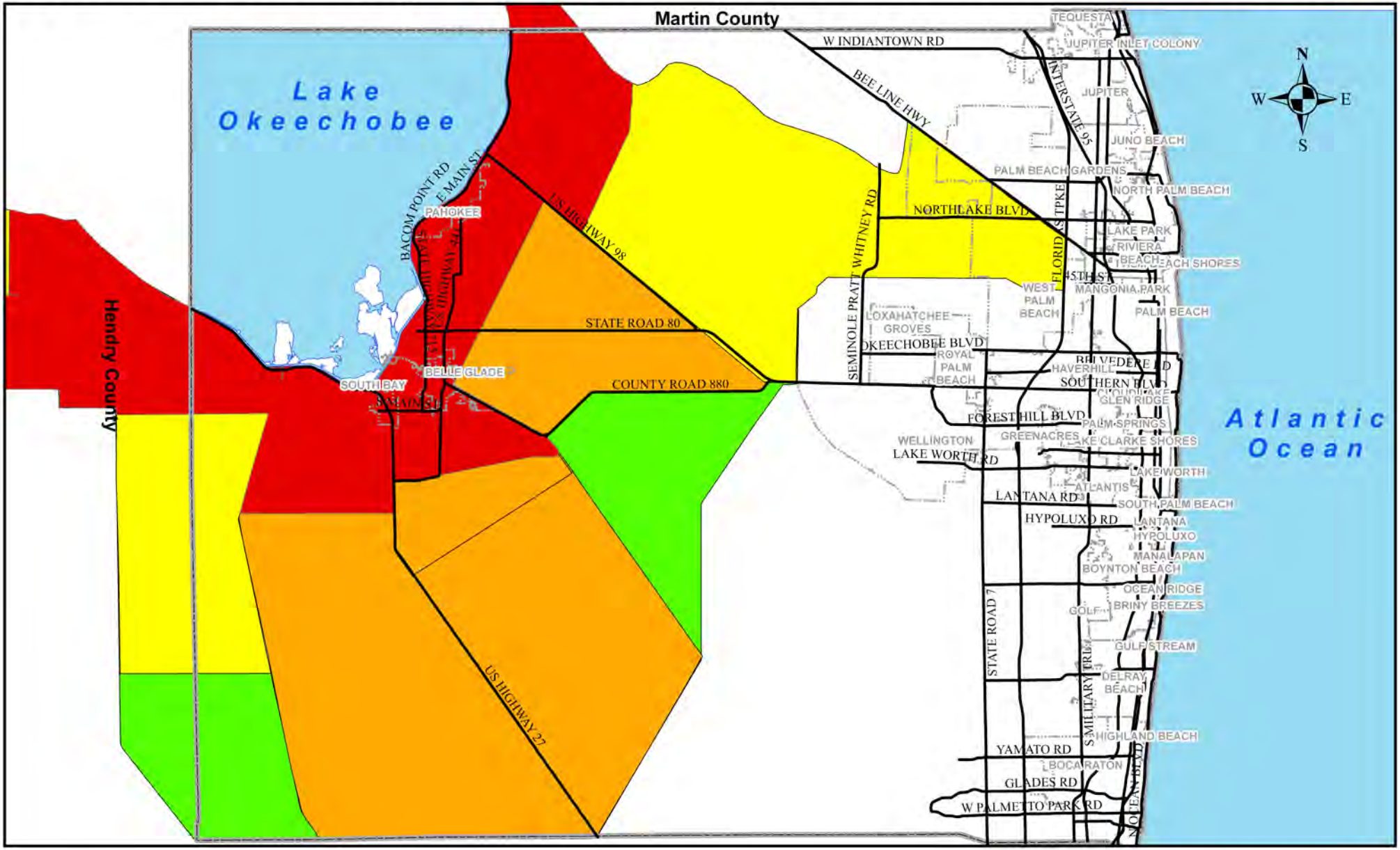
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 11, 2009
Data Source: Palm Beach County Emergency Management

Palm Beach County
Historical Flood Prone Areas



Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 6, 2009
Data Source: South Florida Water Management District and Palm Beach County Emergency Management

Palm Beach County Herbert Hoover Dike Breach Inundation Area



Legend

Water Inundation based on 26' Lake Level with multiple breaches

- Less than 1 day
- 1-5 days
- 5-8 days
- 8-12 days

0 3.5 7 14

Miles

Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 11, 2009
Data Source: US Army Corps of Engineers

Palm Beach County Peak Hurricane Wind Speed Potentials

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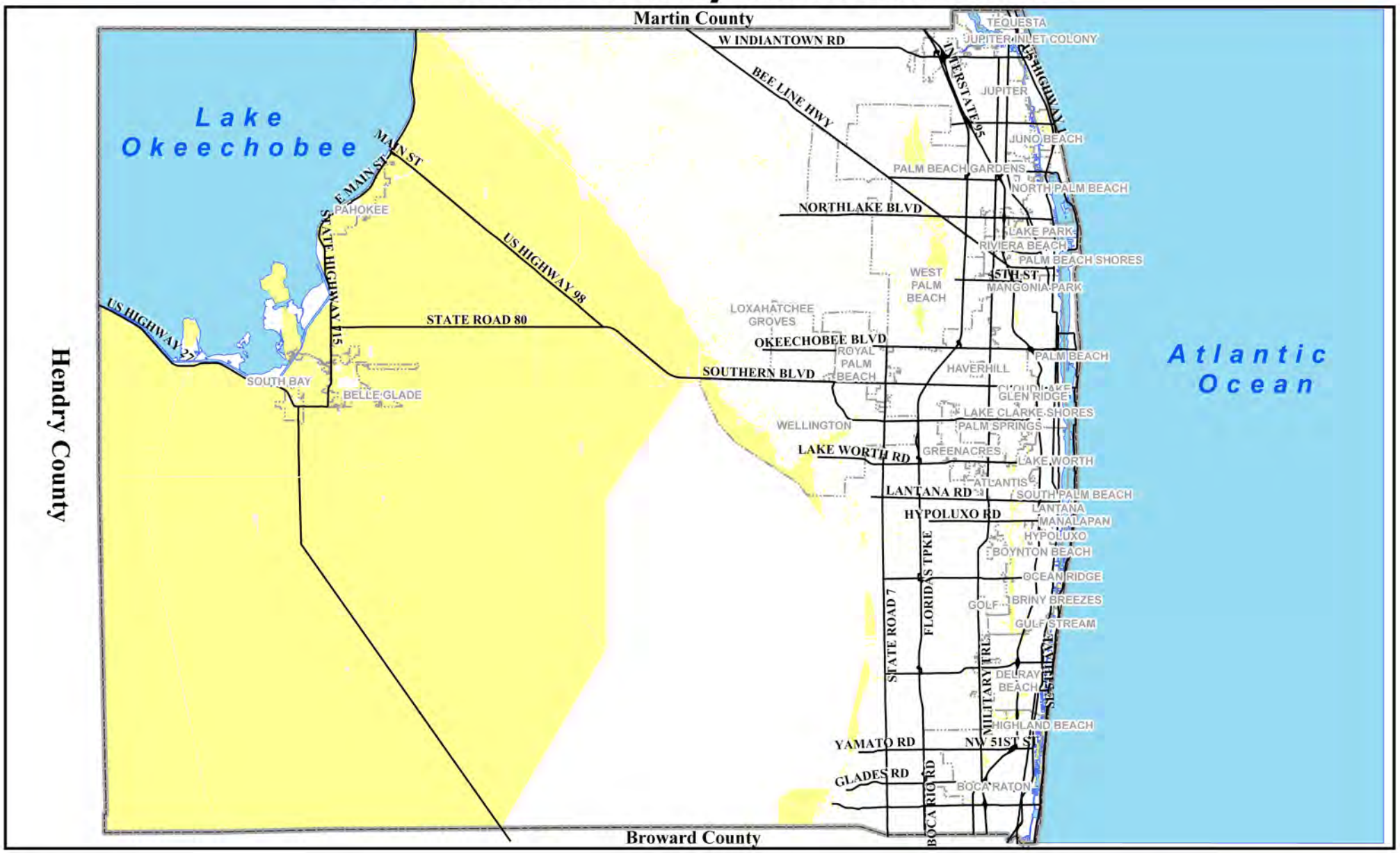
Miles

Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 6, 2009
Data Source: NOAA

Palm Beach County Muck Soil Areas



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MUCK SOIL AREA

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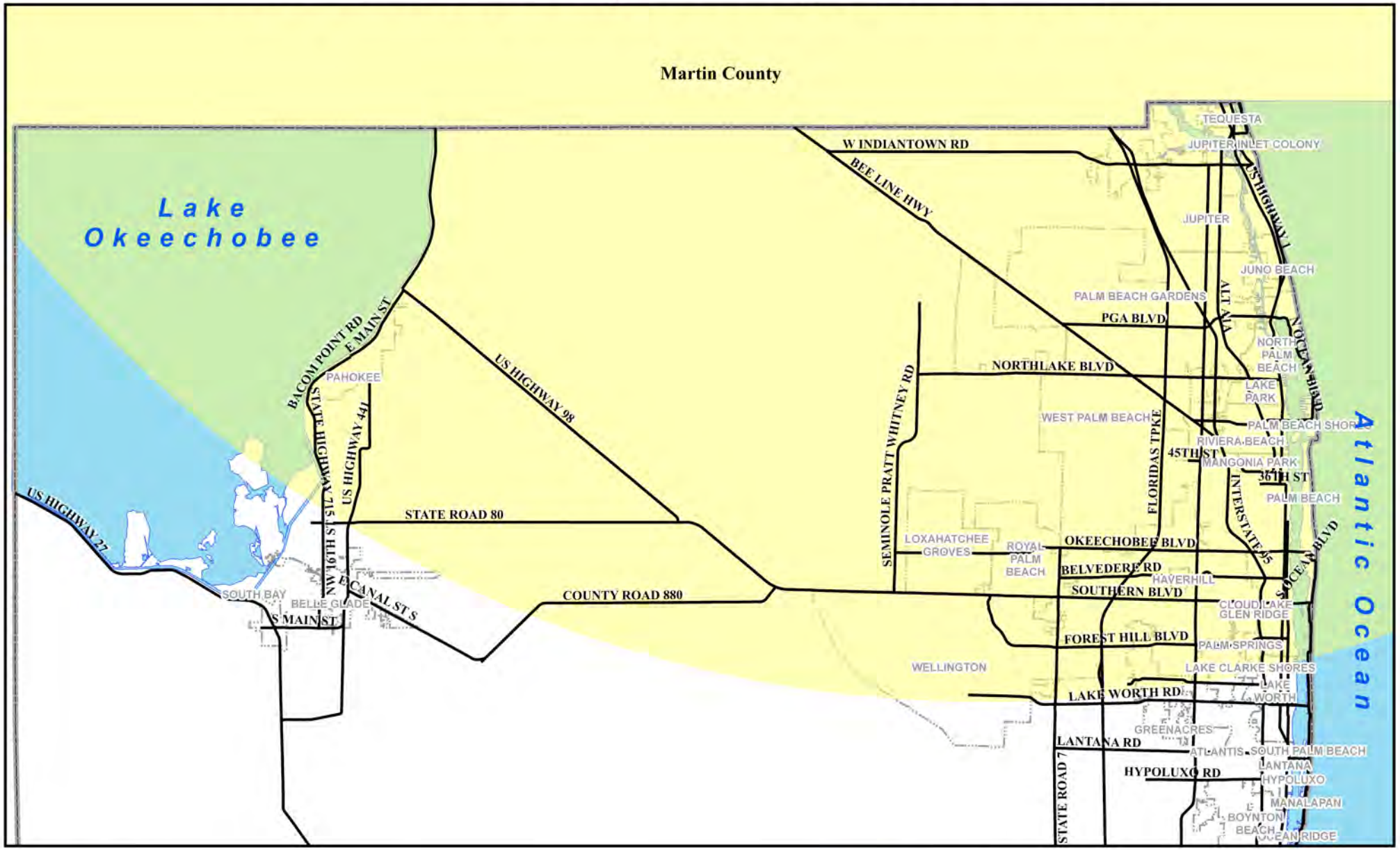
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 11, 2009
Data Source: Palm Beach County Environmental Resource Management

Palm Beach County Radiological Hazard Area



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50 mile Ingestion Pathway Zone

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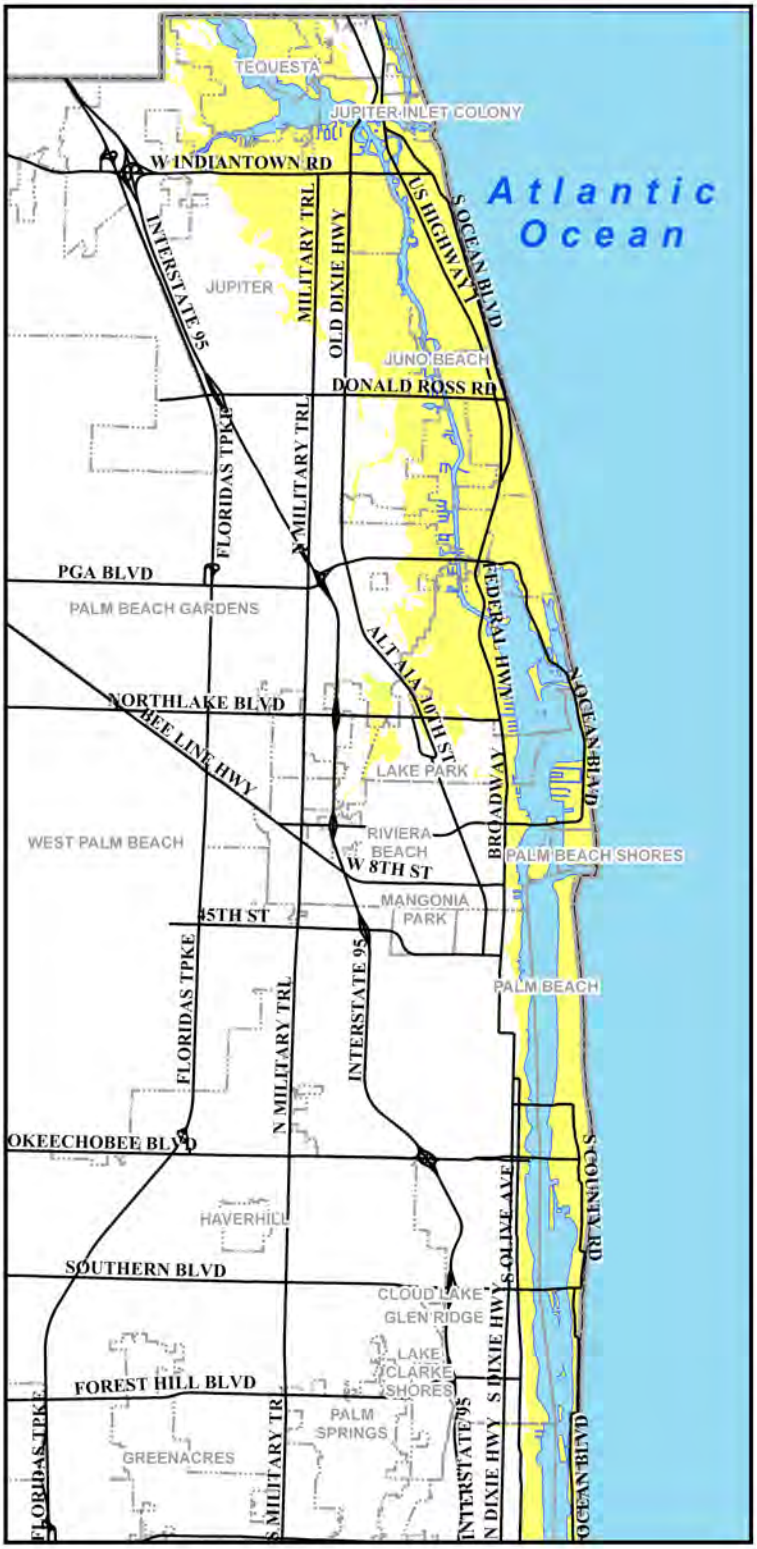
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 11, 2009
Data Source: Florida Power & Light

Palm Beach County
Storm Surge Area

Northern Palm Beach County



Southern Palm Beach County

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SURGE AREA

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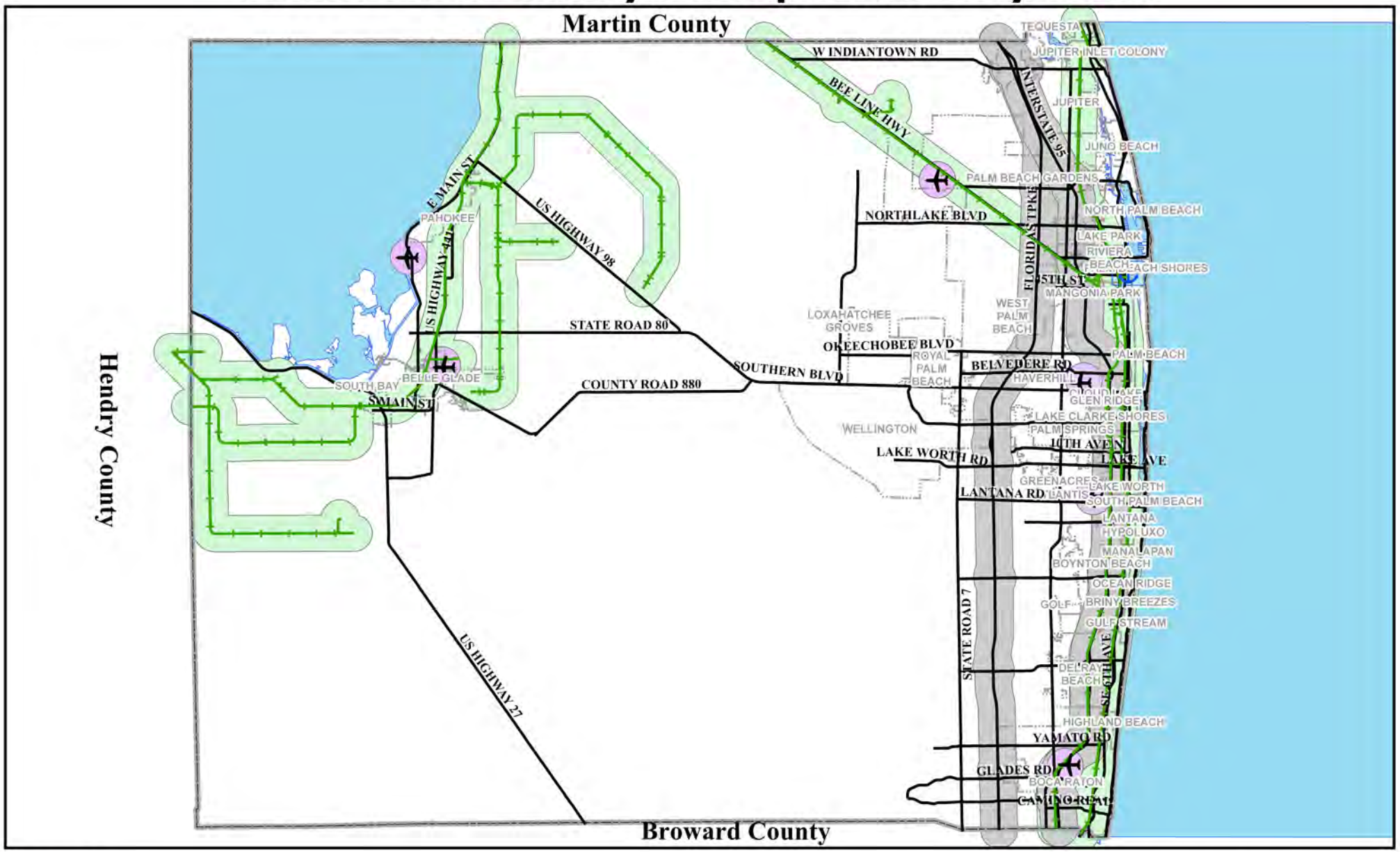
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 11, 2009
Data Source: US Army Corps of Engineers

Palm Beach County Transportation Systems



Legend

1 Mile Buffer of:

- Port of Palm Beach
- Airport
- Turnpike & I-95
- Railroad

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Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 11, 2009
Data Source: Palm Beach Countywide GIS

Palm Beach County
Tsunami Threat Area

Northern Palm Beach County

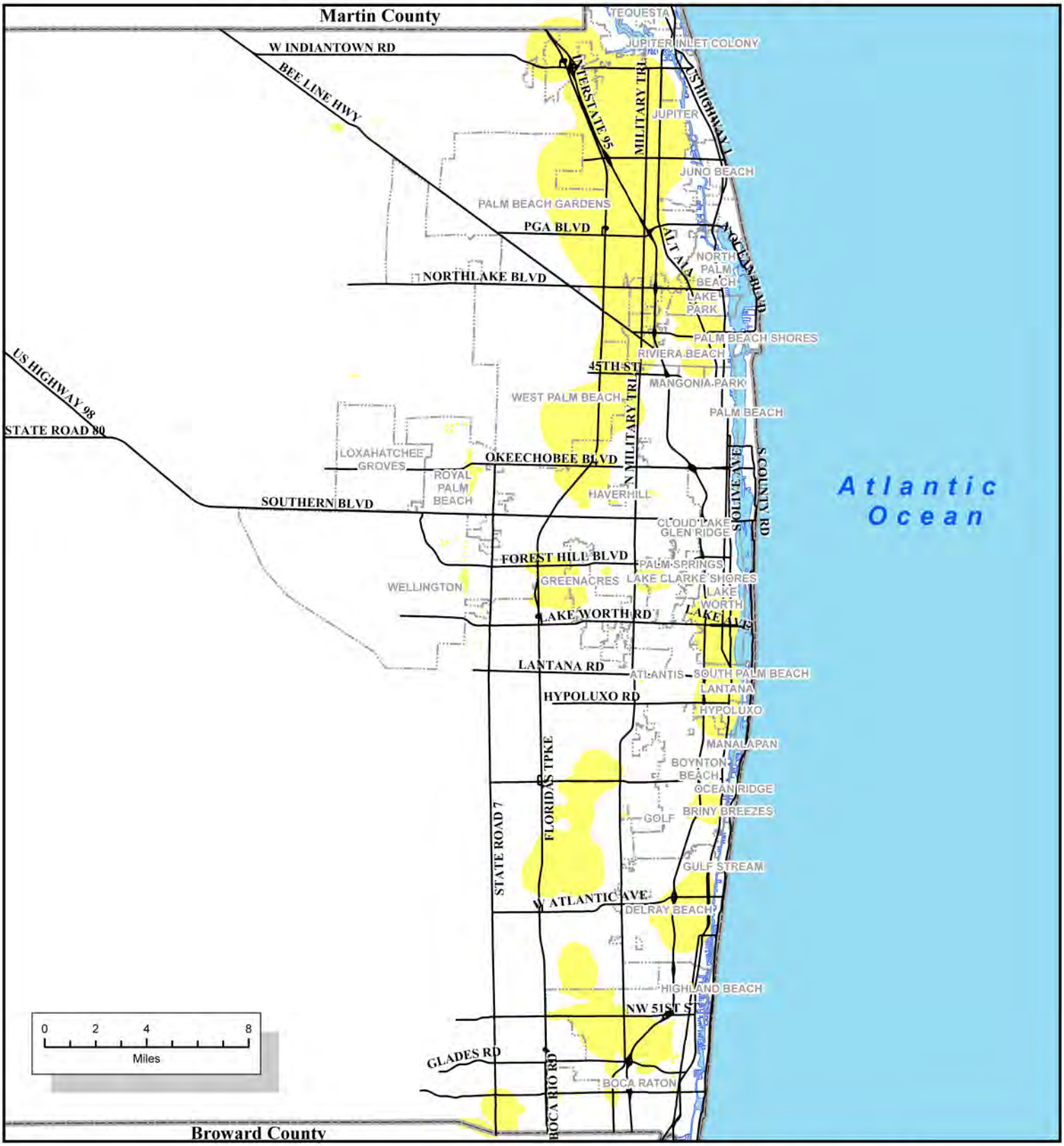
Southern Palm Beach County

Legend

1 Mile Buffer of Atlantic Ocean

Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 11, 2009

Palm Beach County
Wellfield Protection Zone Areas



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WELLFIELD PROTECTION ZONE

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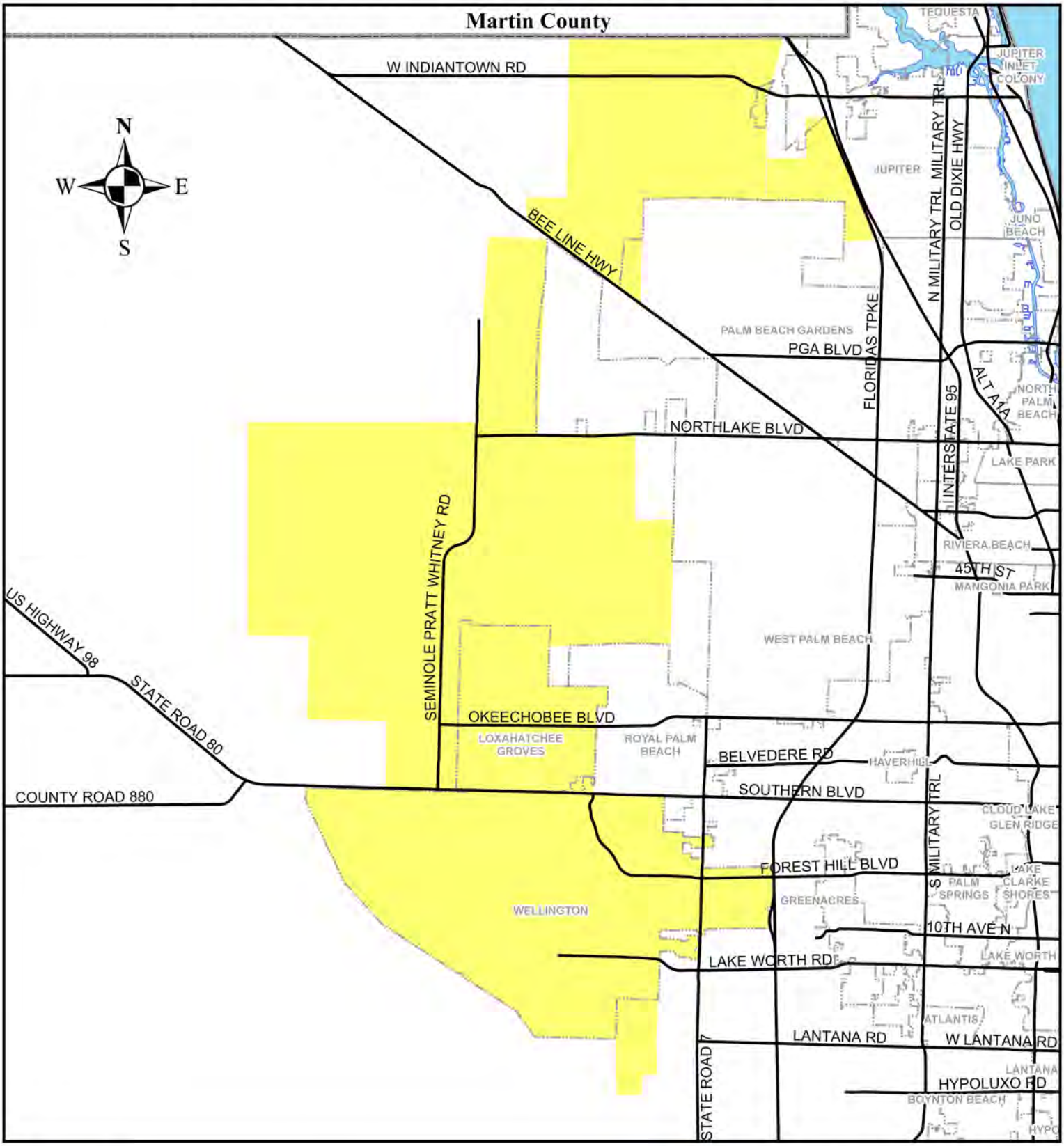
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 11, 2009
Data Source:Palm Beach County Environmental Resource Management

Palm Beach County
Wildland Urban Interface Areas



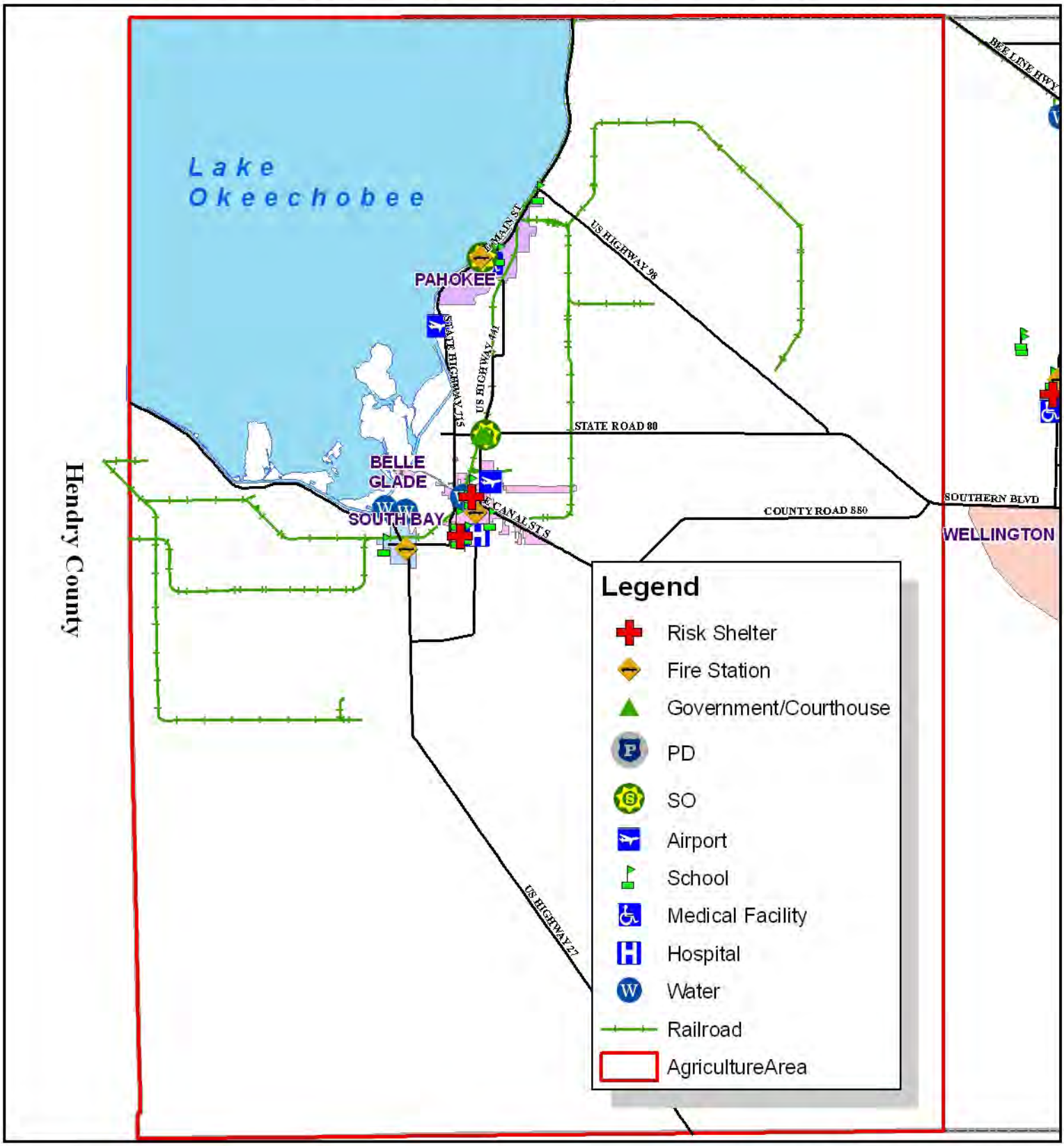
Legend

Wildland Urban Interface Area

0 1.5 3 6
Miles

Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 11, 2009
Data Source: Palm Beach County Fire Rescue

Palm Beach County Facilities Within An Area With A Potential for Agricultural Pests



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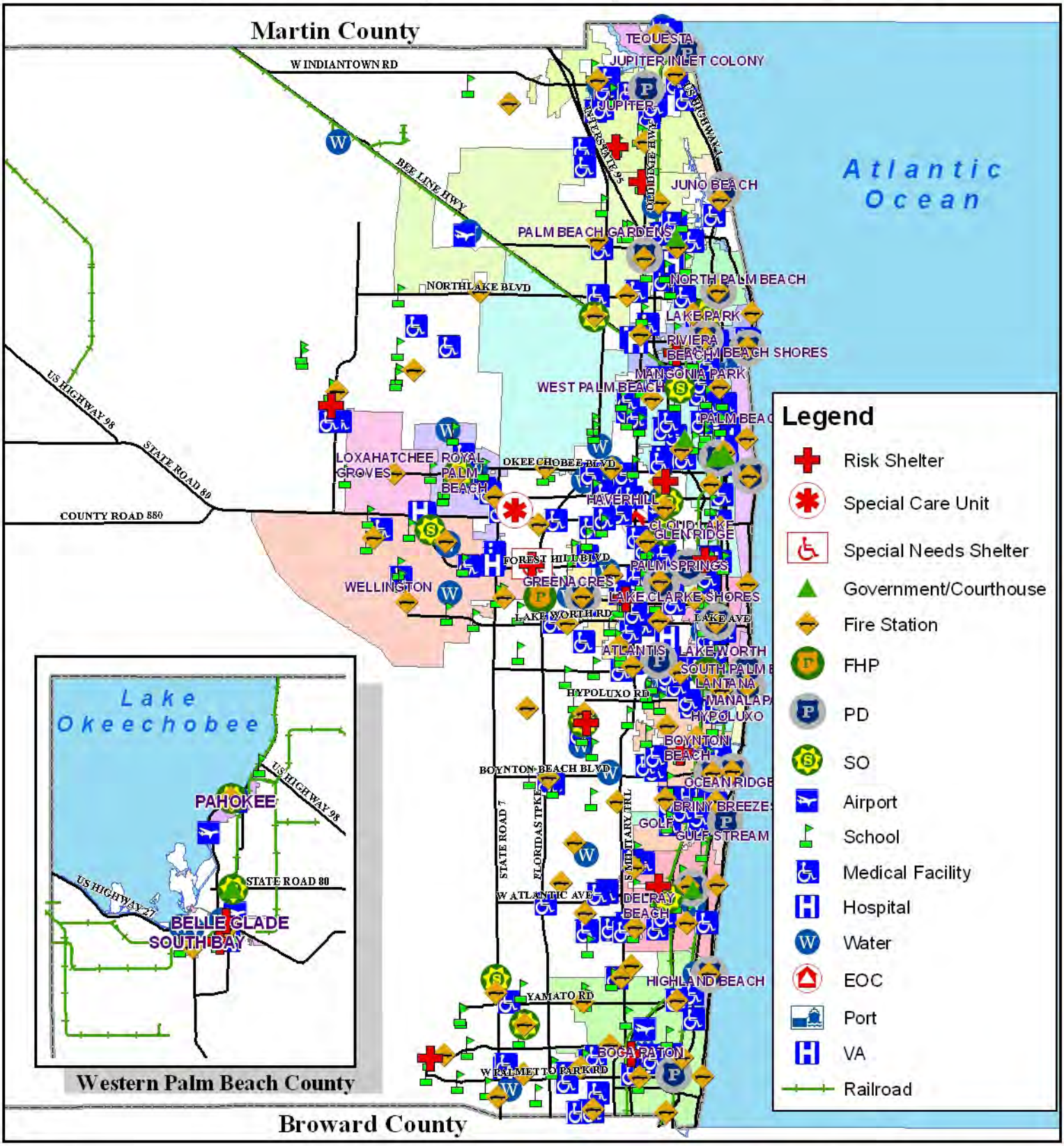
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source: Palm Beach Countywide GIS

Palm Beach County Facilities Impacted by Countywide Events



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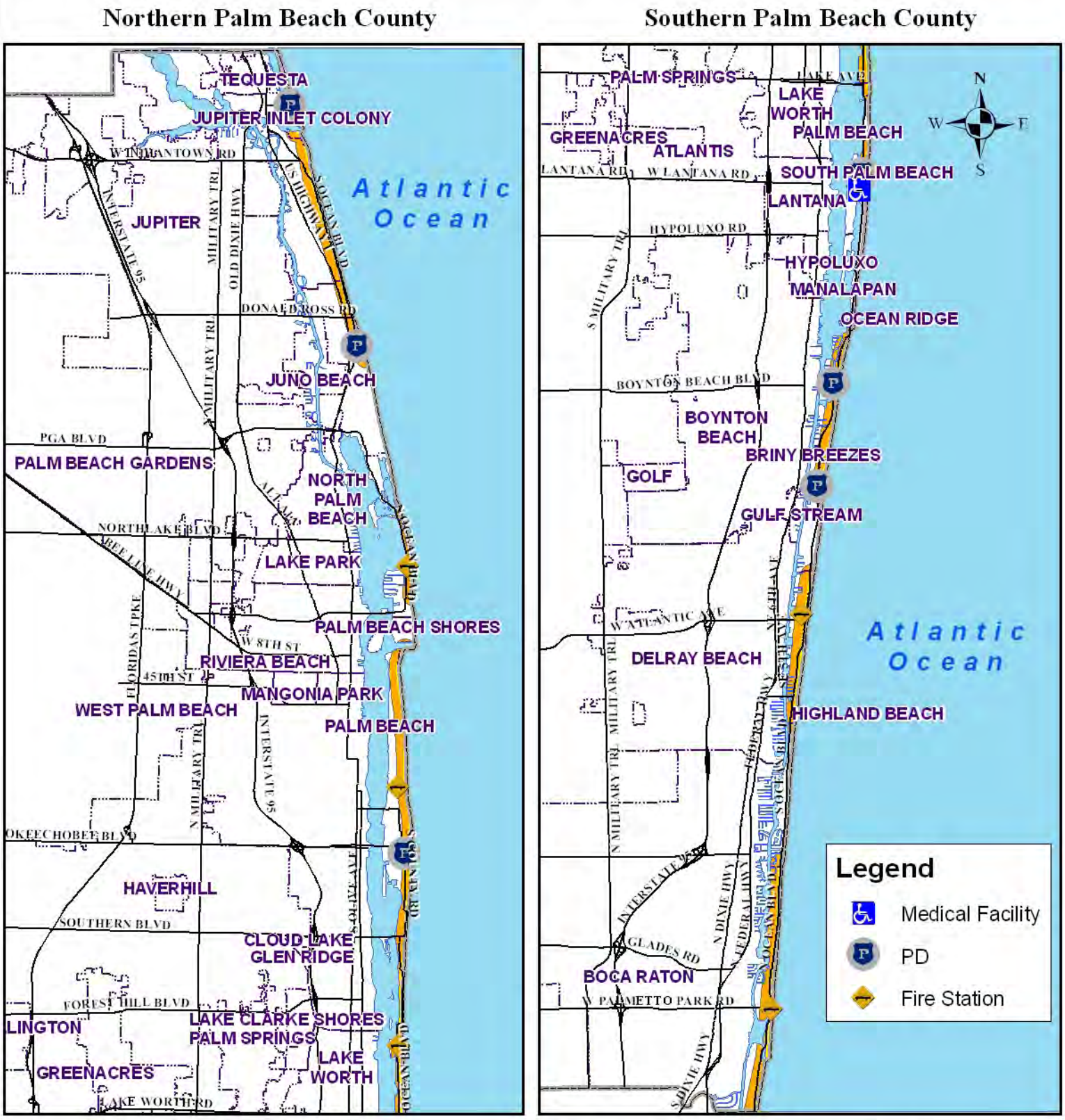
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source: Palm Beach Countywide GIS

Palm Beach County Facilities within .25 mile of the Coastal Erosion Area

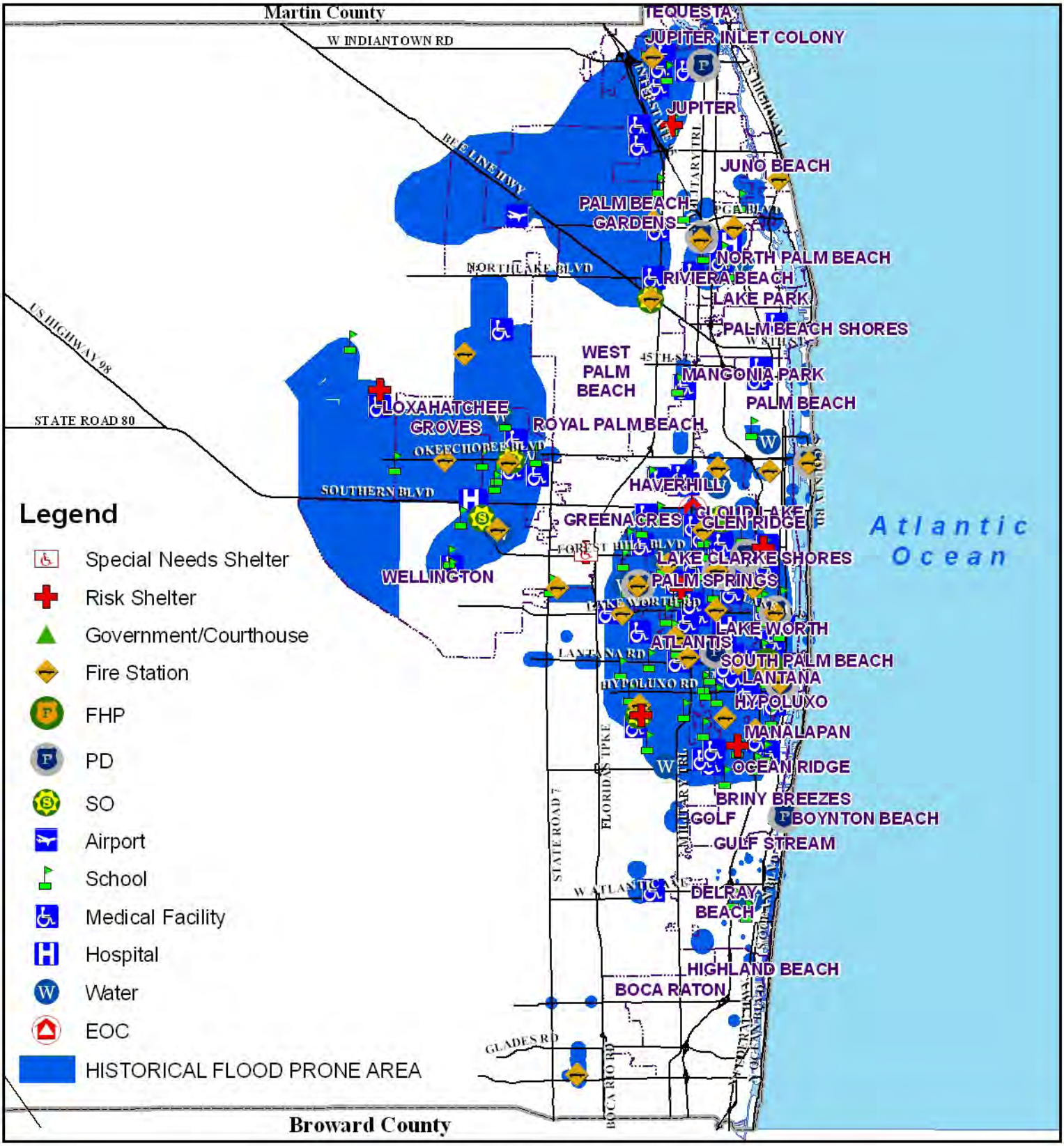


Legend

- Coastal Erosion Area
- .25 Mile Buffer

Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source: Palm Beach County Environmental Resource Management

Palm Beach County Facilities within Historical Flood Prone Areas



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Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source: South Florida Water Management District and Palm Beach County Emergency Management

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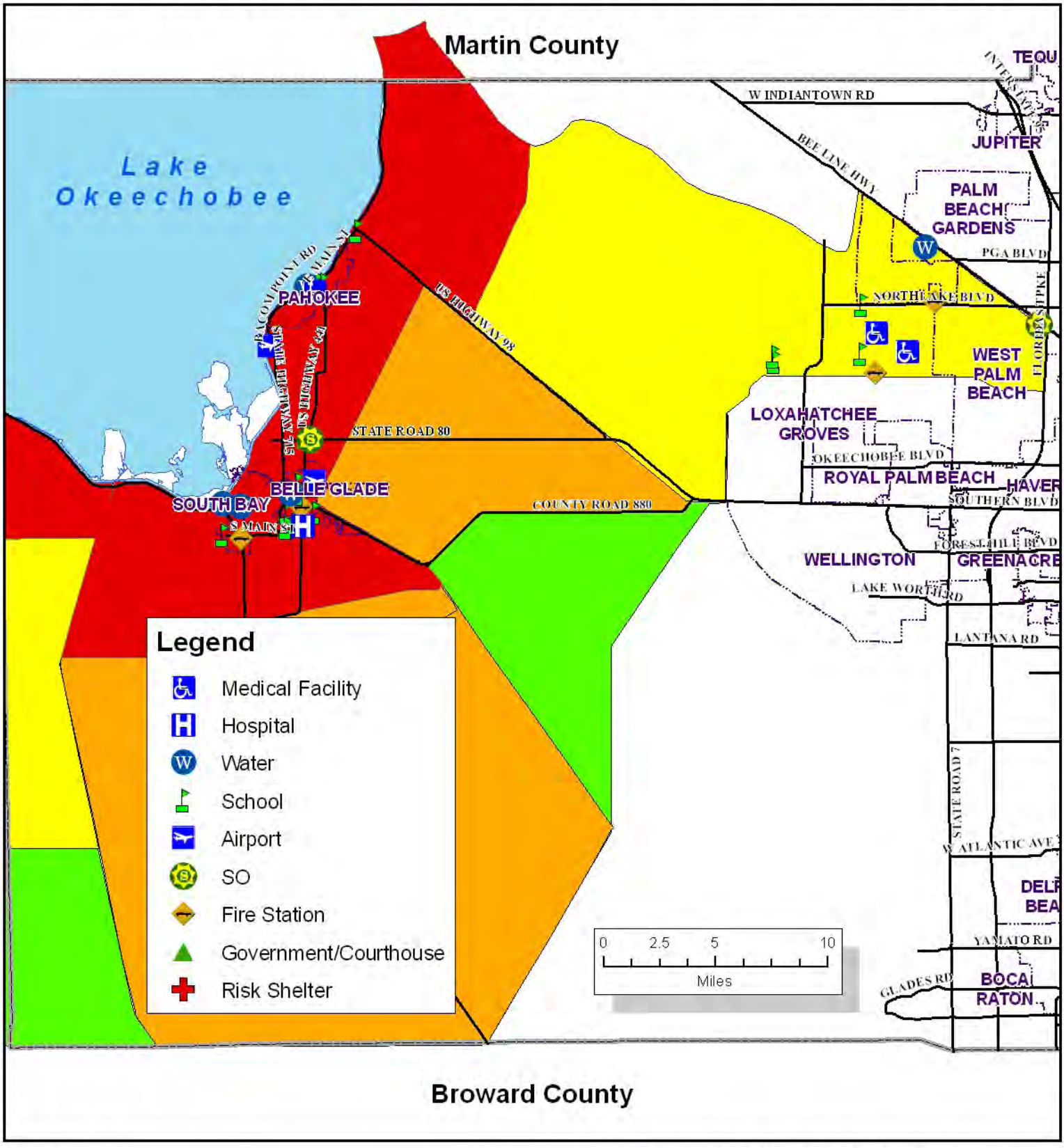
Palm Beach County Facilities within the Herbert Hoover Dike Breach Inundation Area



Legend

- Medical Facility
- Hospital
- Water
- School
- Airport
- SO
- Fire Station
- Government/Courthouse
- Risk Shelter

Legend

Water Inundation based on
26' Lake level with multiple breaches

- Less than 1 day
- 5-8 days
- 1-5 days
- 8-12 days

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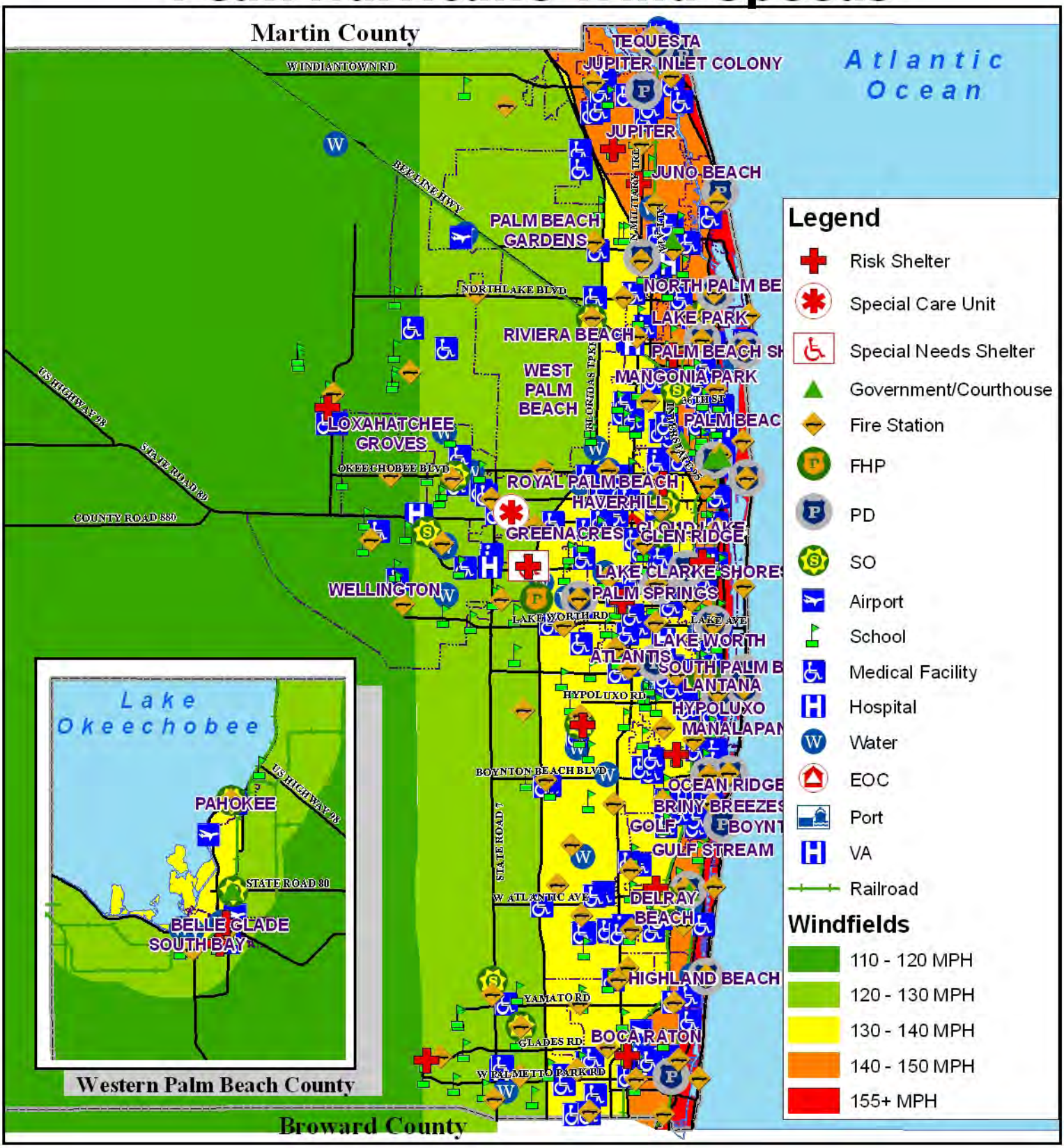
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source: US Army Corps of Engineers

Palm Beach County Facilities within Peak Hurricane Wind Speeds



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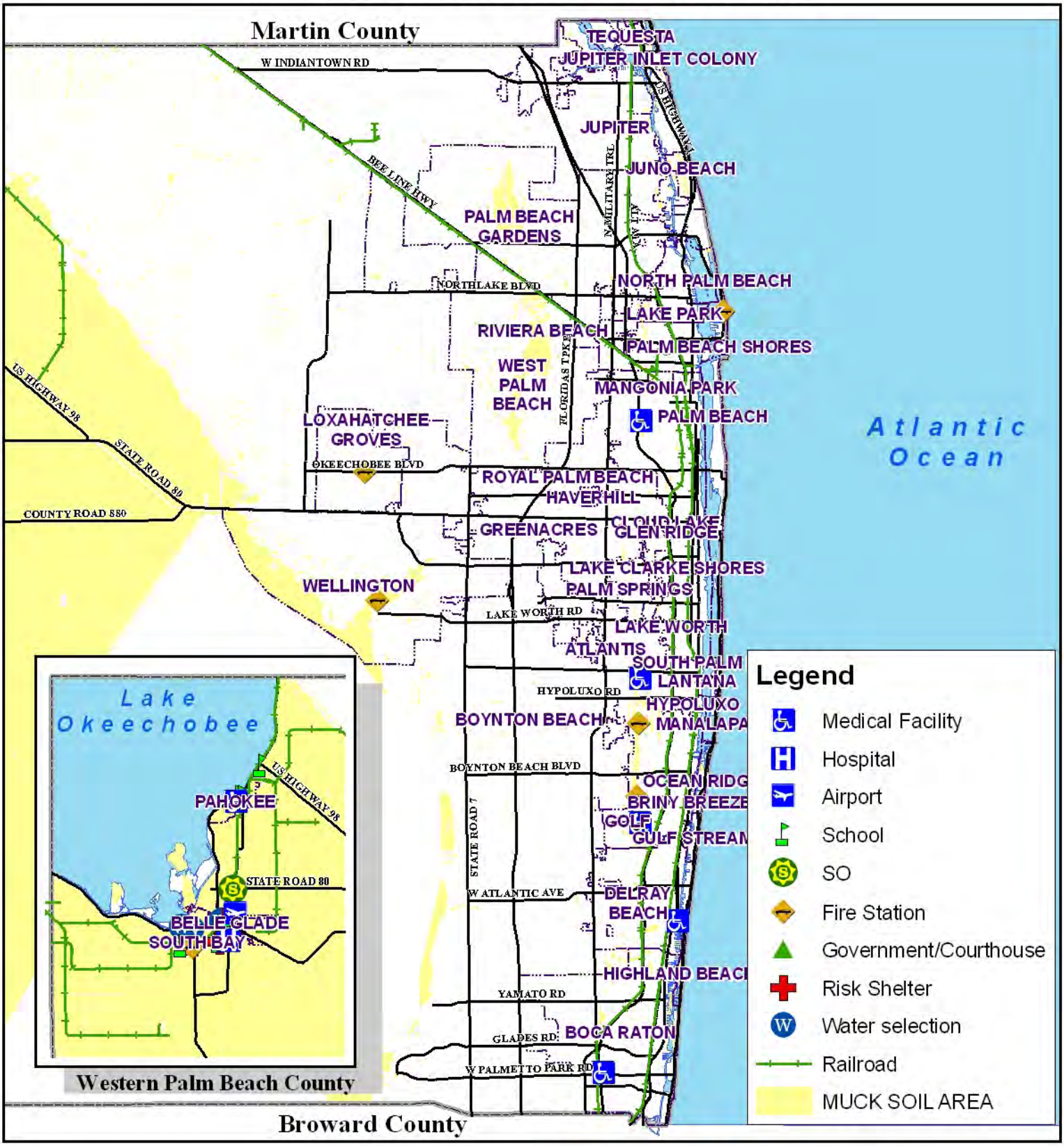
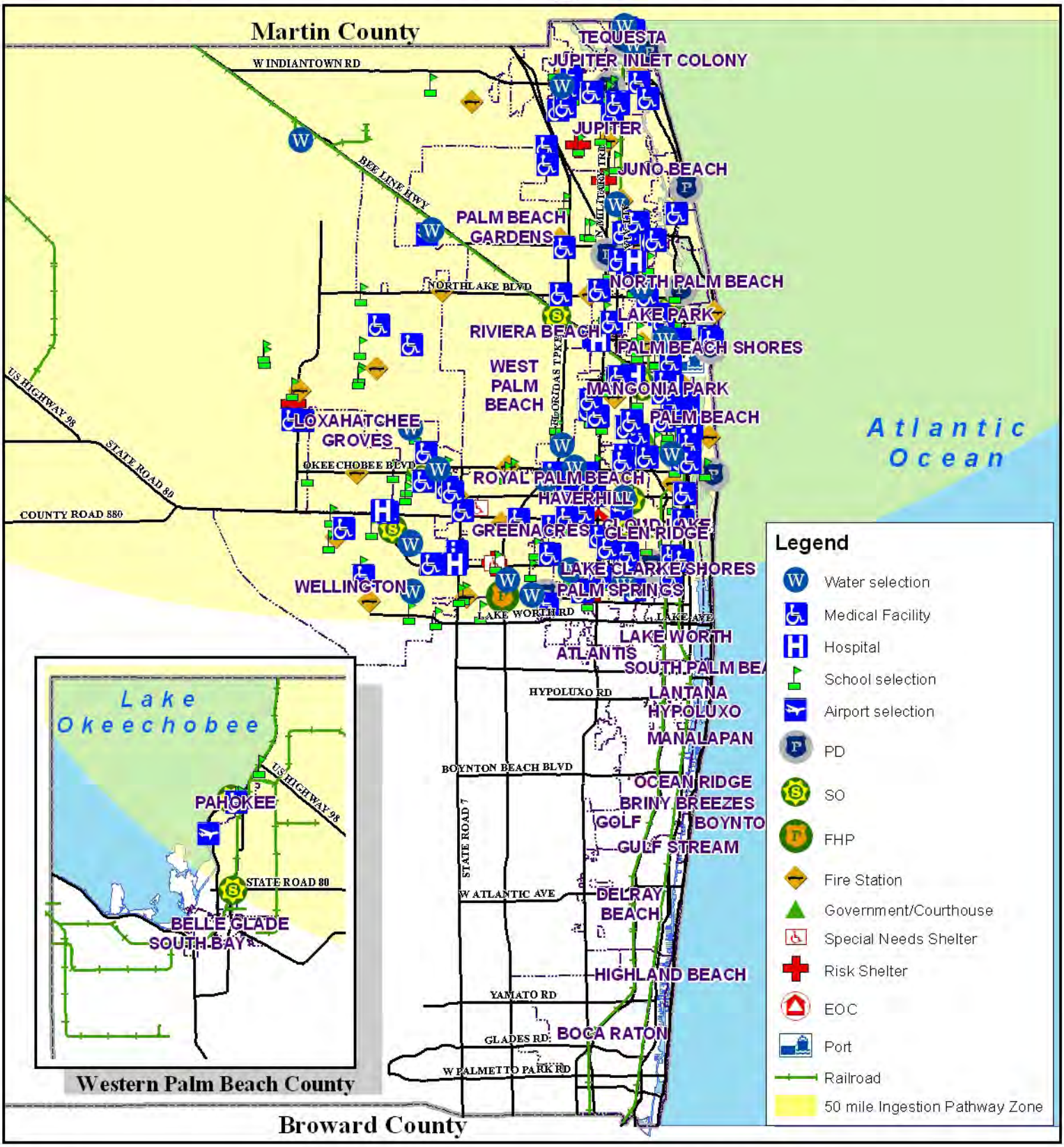
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source: NOAA

Palm Beach County Facilities within Muck Soil Areas



Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source: Palm Beach County Environmental Resource Management

Palm Beach County Facilities Within The Radiological Hazard Area



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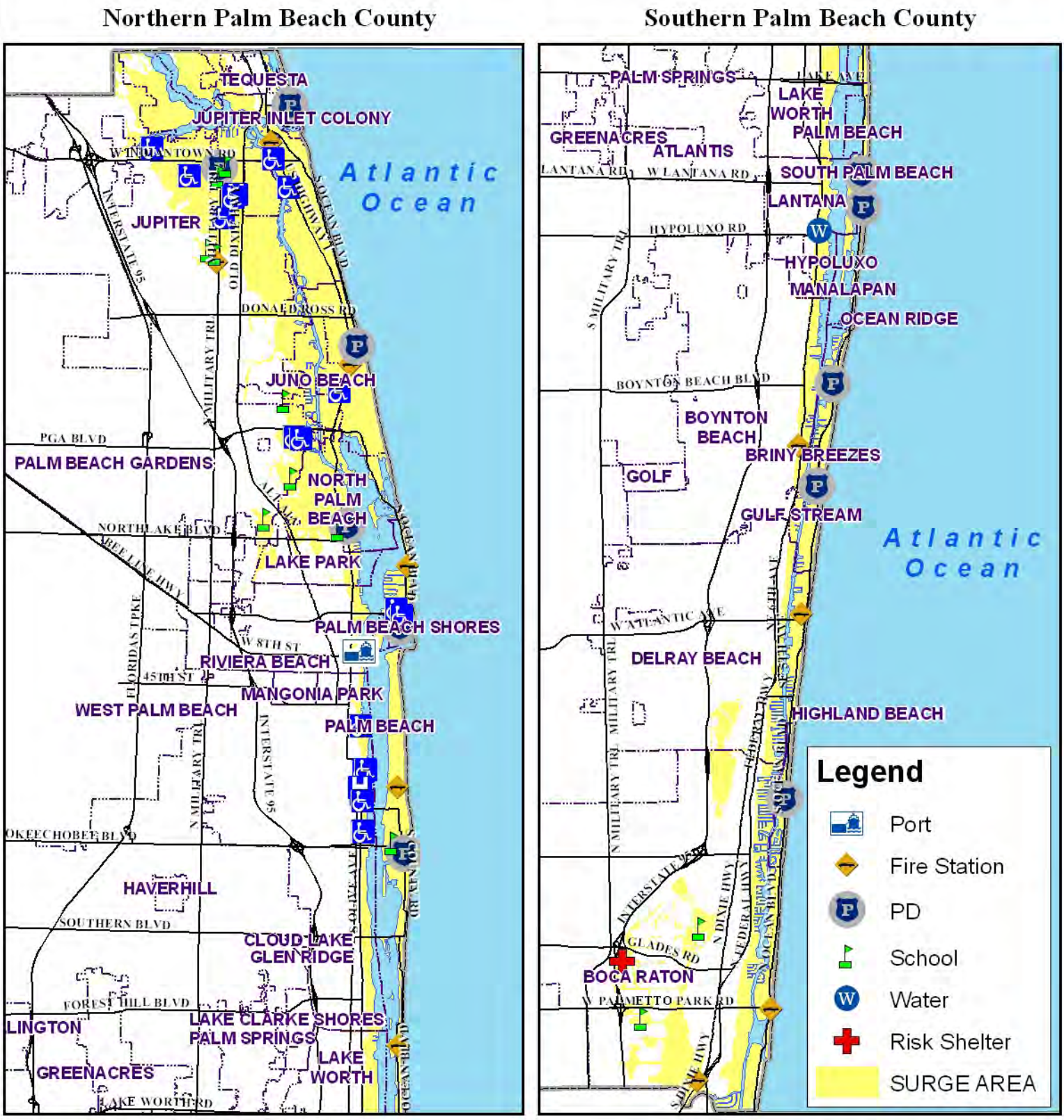
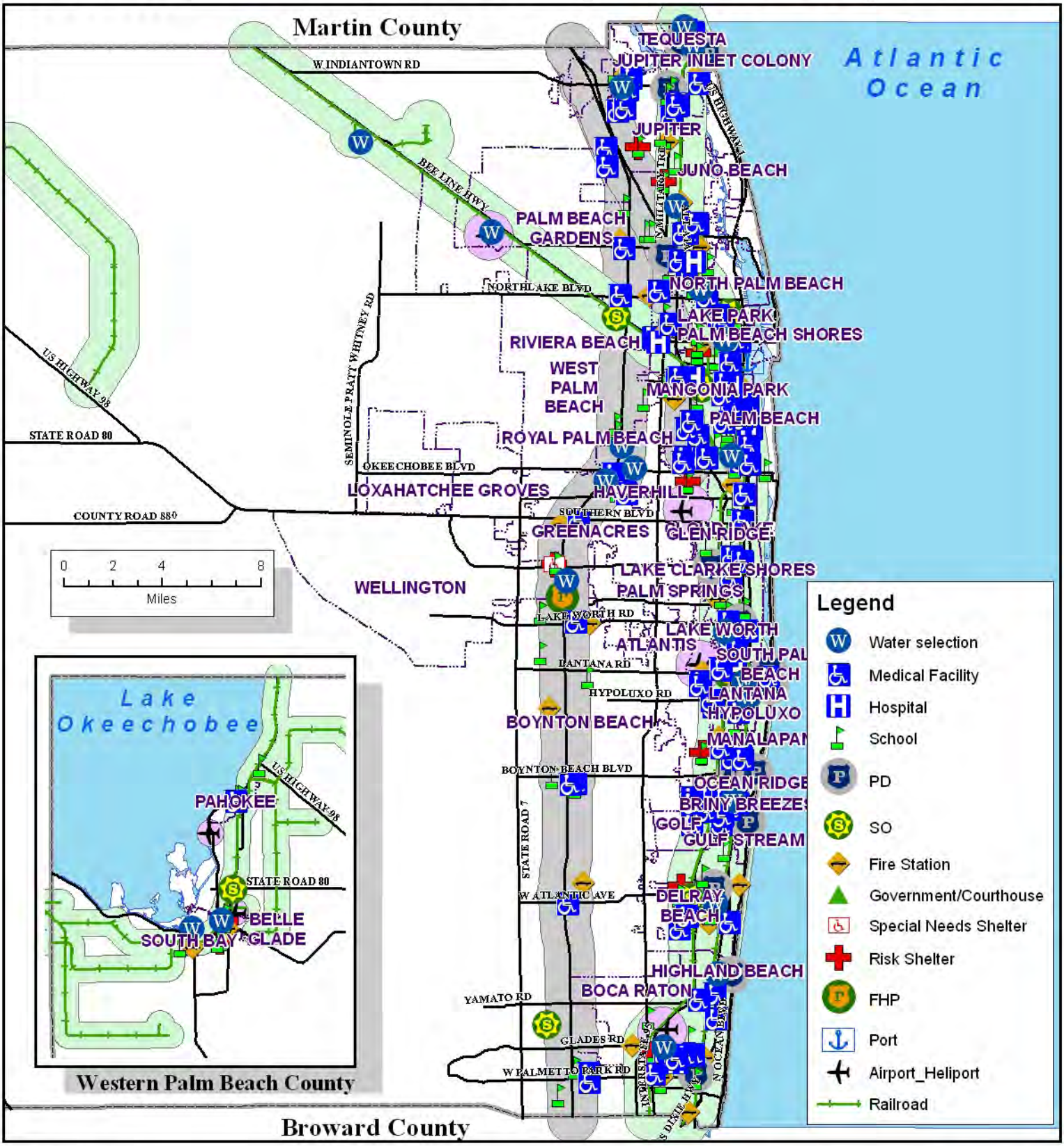
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source: Florida Power & Light

Palm Beach County Facilities Within the Storm Surge Area



Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source: US Army Corps of Engineers

Palm Beach County Facilities Within 1 mile of Transportation Systems



Legend

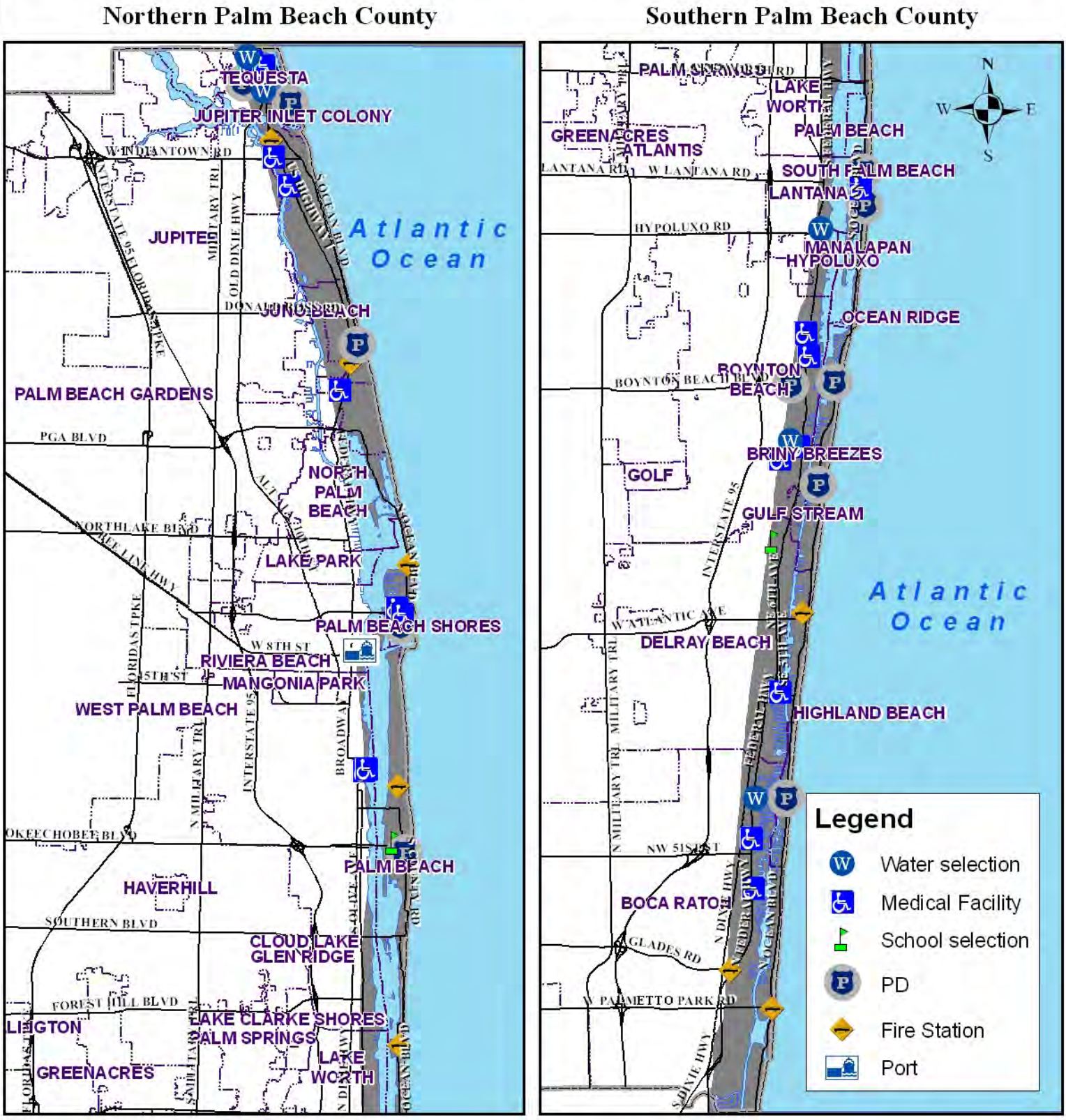
1 Mile Buffer of:

- Airport
- Port of Palm Beach
- I-95 & Turnpike
- Railroad

N W E S

Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source: Palm Beach Countywide GIS

Palm Beach County Facilities Within 1 Mile of the Atlantic Ocean Tsunami Threat Area

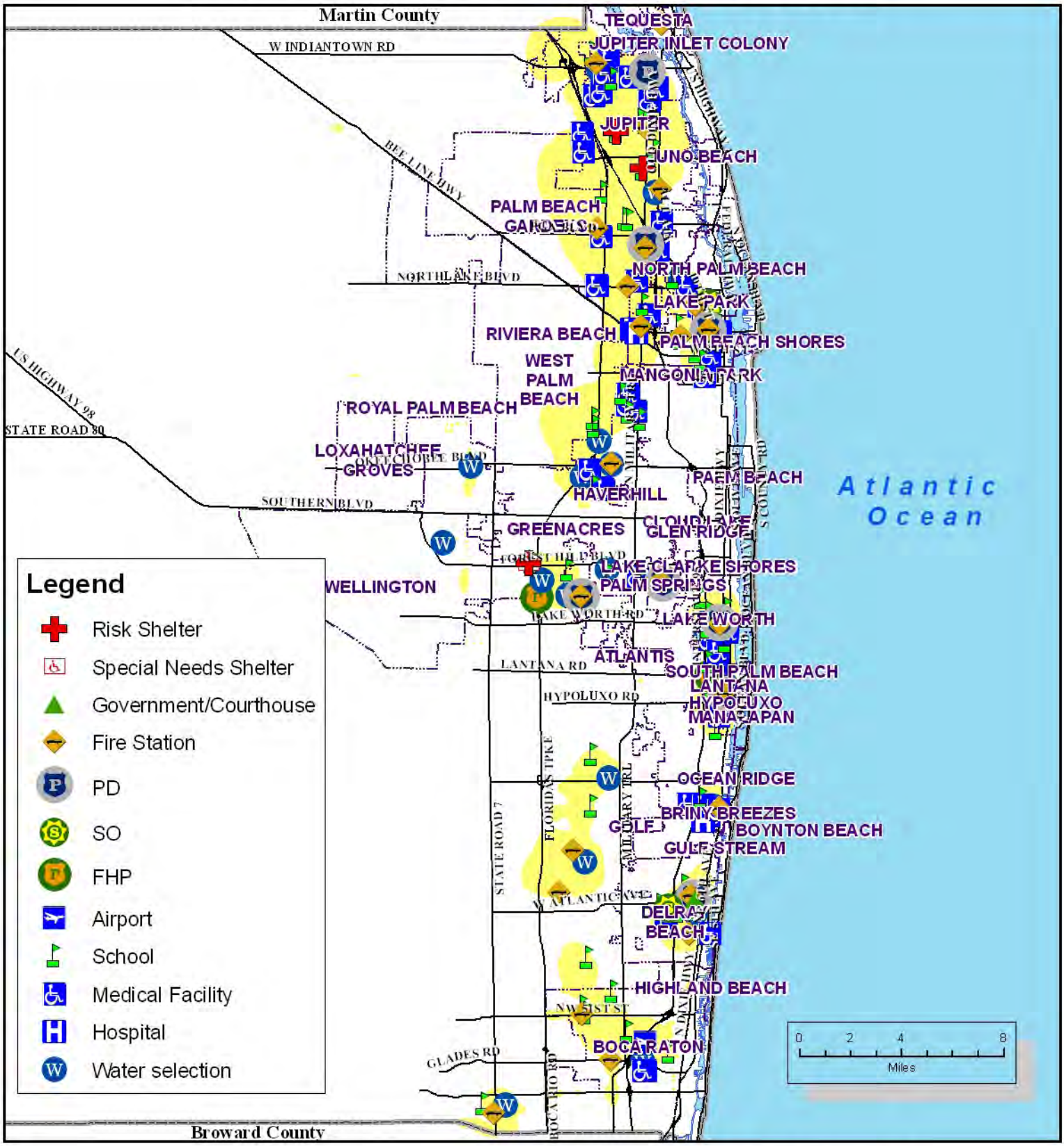


Legend

1 Mile Buffer of Atlantic Ocean

Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009

Palm Beach County Facilities Within a Wellfield Protection Zone



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WELLFIELD PROTECTION ZONE

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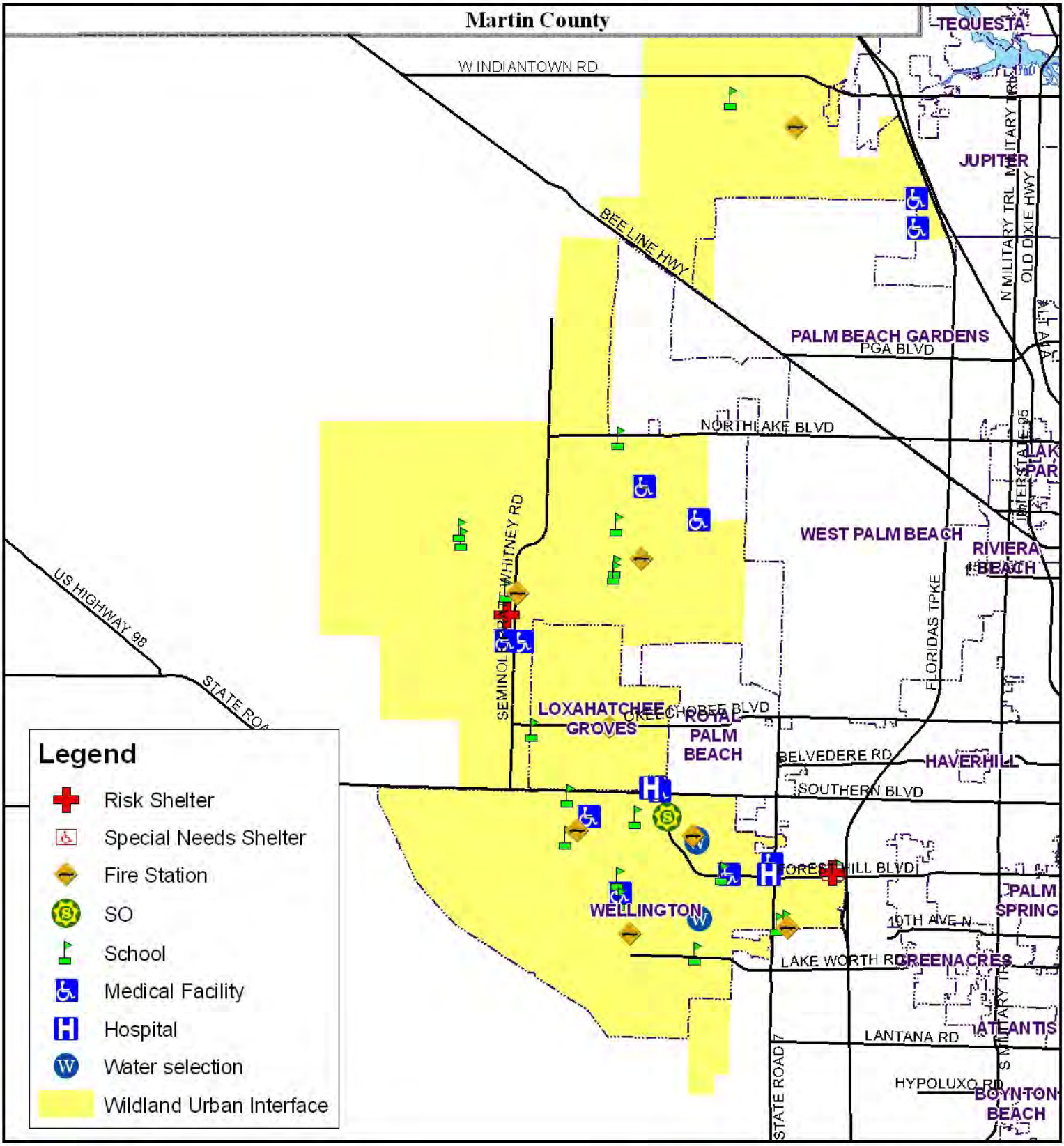
Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source:Palm Beach County Environmental Resource Management

Palm Beach County
Wildland Urban Interface Areas



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Miles

Public Safety Department
GIS Services 561-712-6400
LMS Plan
Date: May 15, 2009
Data Source: Palm Beach County Fire Rescue